The Singapore Family Physician

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College of General
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Vol. IX No. 1
January/March 1983

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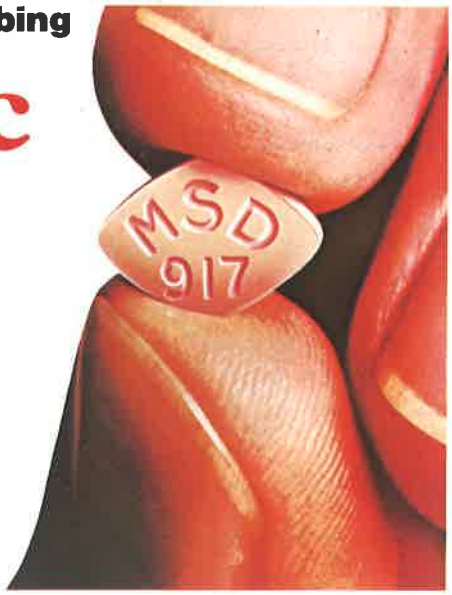

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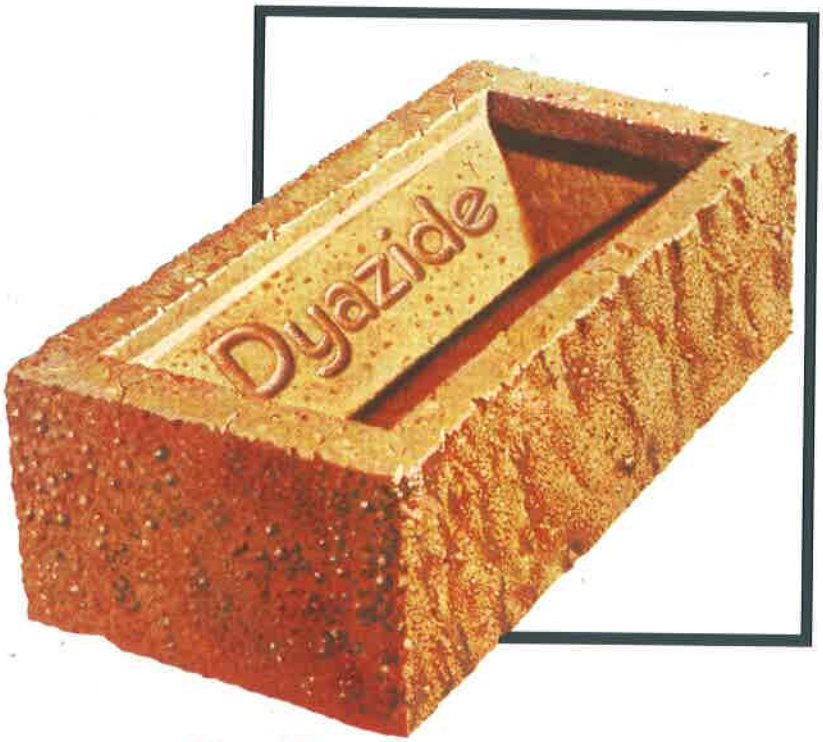

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THE SINGAPORE FAMILY PHYSICIAN

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TENTH
WONCA WORLD CONFERENCE
ON FAMILY MEDICINE

SINGAPORE
20th – 24th May, 1983
THEME: "The Family Physician in a Changing World"

HIGHLIGHTS:

* **CONFERENCE OPENING CEREMONY** at World Trade Centre, Hall 3, on Friday, May 20th 1983, at 7:15 p.m. It will be opened by His Excellency, Mr. C. V. Devan Nair, President of the Republic.

* **KEY-NOTE ADDRESS** by Dr Donald I Rice, Executive Director, College of Family Physicians of Canada.

* **PLENARY SESSIONS**

Saturday, 21st May, 1983
"Challenge of Family Medicine Around the World"

Dr Lee Suan Yew
Dr Julio Ceitlin
Dr Prakash C Bhatla
Prof David H H Metcalfe

Sunday, 22nd May, 1983
"Education

Dr F Marian Bishop
Dr Wesley E Fabb
Dr Reg Perkin

Monday, 23rd May, 1983
"Research"

Dr Maurice Wood
Dr Henk Lamberts
Dr Poul A Pedersen

Tuesday, 24th May, 1983
"Future of Family Medicine"

Dr M K Rajakumar
Prof Ashley M Aitken
Dr T D S Seddon
Prof Robert E Rakel

* **WORKSHOPS**

* **WONCA STANDING COMMITTEE FORUMS**

* **FREE STANDING PAPERS**

* **CONFERENCE BANQUET and INSTALLATION OF WONCA EXECUTIVE** at the Neptune Theatre Restaurant, on Tuesday, May 24th 1983, at 7:30 p.m.

For more information please contact:–

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Editorial

Implications of the Tenth WONCA World Conference on Family Medicine

In May this year, the College will be playing host to a very important event in its history — the Tenth WONCA World Conference on Family Medicine. It was in New Orleans, U.S.A., at the Ninth WONCA World Conference that a delegation from Singapore made its bid against 5 other countries and Singapore was voted overwhelmingly as the venue for the Tenth World Conference. The wide majority in votes with which the College won the bid, and the fact that this will be the first time a WONCA World Conference is to be held in South East Asia makes it doubly important that the College plays host to a well-planned and well-organised Conference — a conference with quality in scientific contents and creature comfort.

It is with this task in mind that the seven members of the Host Organising Committee (Dr Alfred Loh — Chairman, Dr Victor Fernandez — Deputy Chairman/Treasurer, Dr Lim Kim Leong — Organising Secretary, Dr Frederick Samuel — Scientific Sub-committee Chairman, Dr Moti H Vaswani — Social/Publicity Sub-committee Chairman, Dr Paul Chan — Exhibition Sub-committee Chairman and Dr Goh Lee Gan — Publications Sub-committee Chairman) have been meeting and planning over the past 2½ years. The Host Organising committee meets every month whilst the various sub-committees meet at least once monthly or more often. All the planning, discussions, budgeting, correspondences, appeals and stress are beginning to pay off now as the hundreds of loose ends, bits and pieces are falling into place and look less formidable. In the past months, the various sub-committees have very gradually and after much persuasion been able to attract the interest and even the involvement of a handful of doctors in primary health care in the private and public sectors. But, sad to say, the numbers we have are still very far from what we actually need and must have if the Conference is to run smoothly and effectively. The Host Organising Committee (HOC) hopes and urges all doctors able to help even for half a day to come and give us the badly needed support. So much time and sacrifice have been made by the HOC and sub-committees that it would be a dire shame to see aspects of the Conference not meeting up to world conference standard because of the lack of manpower.

The Tenth WONCA World Conference, besides being the first ever to be held in South East Asia, will also enjoy the rare distinction of being "first" in other aspects. The data of all aspects of the Conference from budgeting to delegate and scientific programme control and schedules have been put on computer using a special programme of software designed for the purpose. This would be the first large size medical conference to use computers for information processing and would provide much in terms of experience and pitfalls for those wishing to use computers for their future conference. Another "first" which the conference will have is the "curtain raiser". This will be shown at the Opening Ceremony and will take the form of a 16-projectors multi-screen computerised audio-visual slide presentation somewhat similar in form to the "Singapore Experience". The theme for this slide presentation is "The Role of The Family Physician in a Changing World". This audio-visual promises to be a real experience and it is hoped that delegates will buy this on video tapes as souvenirs as well. Finally, it is likely that this conference will also be the first medical conference in Singapore with a total registration of over 1,500 delegates.

Response from overseas for the Tenth WONCA World Conference has been most encouraging. So far and with still two full months from the Conference date, the total number of registration has reached 1,400. Strong support for the Conference has come from countries like Canada, United Kingdom, United States and the Scandinavian countries. Support from local doctors has been fairly good but slow so far and the College hopes that more general practitioners/family physicians in Singapore will register and give their support. After all, this Conference is hosted by the general practitioners/family physicians of Singapore via the College of General Practitioners of Singapore.

A great deal of thought and planning have also gone into preparing the scientific aspect of the Conference. In this respect, the HOC has exercised an important principle in that all mem-

ber colleges of WONCA have been consulted and invited to participate to the fullest in the Scientific Sessions. To this end, the Scientific Sub-committee has sought the views and co-operation of all WONCA member colleges overseas through the very many letters sent out. The morning plenary sessions and the afternoon Free Standing Papers Sessions for the four days of the Conference, show an even spread in the selection of speakers and papers — in geo-political terms and in the various levels of development of Family Medicine from the various countries. A total of over 120 free papers will be read during the four days of the Conference. Proceedings of the Plenary and Free Standing Papers sessions will be published.

The financial aspect of the running of the Conference has been the most difficult one to handle so far. Conference facilities in Singapore can not be said to be cheap. Almost all facilities needed, be they at the Opening Ceremony, Scientific Sessions or the Closing Banquet, have to be paid for and the charges levied have been far from cheap. In the initial stages of planning of the Conference, much hope was placed on the assistance the College could get from the more renowned and larger pharmaceutical establishments in Singapore in the form of sponsorships for plenary speakers, hire of conference facilities, tea breaks, publication of Proceedings, etc. As time went by, the HOC regretfully realized that the hoped-for support from some of the pharmaceutical establishments were disappointingly small or even insultingly absent. Except for a few companies like I.C.I., Roche, Astra, Ciba-Geigy and Johnson & Johnson, which have come forward to assist the Conference, the majority have been pretty silent. It makes one think of where the good old rapport between general practitioners/family physicians and pharmaceutical companies have gone to. The College and HOC are fortunate in that there are still other well-wishers who are willing to assist us in our attempt to host the Conference. Lee Foundation have assisted us with a grant whilst Citizen Watch has agreed to sponsor the curtain raiser. The Exhibition, Meditech Singapore '83, to be held in conjunction with the Conference was planned with participation by the larger pharmaceutical companies in Singapore in mind. Here again, the College must record its regret and disappointment in that the support has been disappointing and tardy. There must be at least 200 pharmaceutical, manufacturing and distributory companies in Singapore alone, but of these only about thirty of them have seen it fit to identify themselves with the Conference and College by participating in the Exhibition.

Lastly, one may ask why the College thought it appropriate to host the Tenth WONCA World Conference on Family Medicine. In my opinion the Conference could not have come to Singapore at a more appropriate time. Over the recent months especially, the discipline of Family Medicine has been brought into focus at various levels. Firstly, there are strong indicators to show that the concept of Family Practice as a distinct medical discipline is gaining acceptance by educationists in Singapore, particularly in the NUS. Secondly, the National Health Plan of the Ministry of Health places more emphasis on the care of the sick outside of the hospital scene and on preventive medicine delivered at the primary health care level. These together with the increasing load to be borne by the private sector as far as primary health care delivery is concerned, make it imperative that better trained family physician/general practitioners are available.

This Conference will bring together to Singapore some of the best brains and experts in Family Medicine/General Practice from countries far advanced in their primary health care delivery system.

For the Singapore family doctor, what better way is there to prepare for the challenges of the future than to meet and tap the expertise of our colleagues from these countries.

Dr Alfred W T Loh
Organising Chairman
TENTH WONCA WORLD CONFERENCE

Effective Communication in General Practice

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Singapore 1027

"Psychotherapy is good communication, within and between man. Good communication, free communication, within or between men is always therapeutic".

Carl Rogers

Introduction:

The art of interpersonal communication is vital to the establishment of a therapeutic relationship. It is a paradox that in this age of telecommunications, radiosatellites and other advanced systems of communications, we do not know how to communicate with one another effectively.

Hearing is a faculty but listening is an art. We hear with our ears but to listen we need to use our eyes, our minds and our hearts. In medical school, we were taught how to question and interview patients to get a clinical history so as to formulate a provisional diagnosis. But sometimes we put the patient's story on the Procrustean couch and cut off those parts of the story which appear irrelevant to our diagnosis. We are irritated when patients are verbose and vague or when they ask too many questions. We were not taught how to listen and more specifically, to listen to feelings.

In an editorial in The Singapore Family Physician in 1979, Dr. E.K. Koh lamented that it was shocking to realise how little was taught on how to communicate with patients in most medical schools. Some of us are fortunate to be born with the gift of relating to people. However, Dr. Robert Bolton found that communication skills could improve one's interpersonal relationships. He contended that any average person could learn improved ways of communicating if he was of sound mind and had determination.

A colleague complained that he wanted to cure his patients, his patients wanted to get well, and yet there seemed to be a barrier between some of his patients and himself. He could not get these patients to accept his explanations and treatment. A patient grumbled that all he wanted was a doctor he could talk with and who would listen to him but his doctors seemed too busy to listen.

Reflective Listening:

Paul Tournier notes that the reason why many people are always saying they want to be "understood", is really that they want to be "guessed". They say, "You have understood me" when we have guessed what it was they wanted to say but could not bring themselves to put into words. Dr. Alexander Reed Martin observed that little was as reassuring to a patient as the correct interpretation of his problems. This kind of "deeper-than-intellectual knowing" has been called "feel knowing" by Dr. Theodore Issac Rubin. He observed that when this was communicated to the patient by the doctor, it provided potent help as it demonstrated the spirit of humanity and caring between them and would generate hope and encouragement.

It is therefore crucial that we truly understand the feelings expressed by our patients. This is most effectively achieved by the technique of listening based on the principle of feedback. This is in essence, what has been called "reflective listening" or "active listening".

Reflective listening is a skill which will help patients to understand their problems and to clarify their feelings. It is also directed towards helping patients to assume responsibility for solving their problems and to promote co-operation with the treatment prescribed by the doctor. In this process, the listener endeavours to understand the feelings expressed as well as the content of the speaker's message and then communicates these feelings back to the speaker. Dr. Bolton described four levels of reflecting listening.

1. **Paraphrasing:** This is a useful response when one is not clear about the feelings expressed by the speaker. The listener communicates to the speaker the content of the message restated concisely in the listener's own words.
   For example:
   Patient: Doctor, your medicines did not do me any good!
   Doctor: You don't feel any better after taking

the medicines.
Patient: Well, my cough was better when I was taking the mixture but it came back when I stopped taking it.

2. **Mirroring feelings:** This involves reflecting back to the speaker the emotions that he or she is expressing. To be able to do so, we need to be sensitive to the feelings expressed in feeling words such as exhausted, frustrated, angry, excited, etc. as well as non verbal signs exhibited by the body language. We would also have to concentrate on the emotions underlying the communication instead of the event described or the content of the statement.
For example:
Patient: I feel like resigning from my job.
Doctor: You are very upset about something in your work.
Patient: I am very angry with my supervisors. I feel that they are always checking on me and don't trust me.
3. **Reflecting meanings:** This is a response which feeds back both the content and the feelings of the communication. Listening is most effective when the feelings underlying the message and the content of the message associated with the feelings are reflected.
For example:
Patient: (suffering from cancer but is in remission): I can't make up my mind about renewing my contract. I've to go for a medical examination if I wish to do so.
Doctor: You are afraid that you may be found unfit during the medical examination.
Patient: Yes, I am afraid that they will find that I have not been completely cured.
4. **Summative reflections:** This is a recapitulation of all the feelings and problems expressed by the speaker over a period of time. A good summary enables the speaker to understand the situation more clearly as this may help him to see the problems from a fresh perspective.

Developing the skills of reflective listening:

In theory, reflective listening appears deceptively simple. In practice, we are often embroiled in ineffective communication responses as our reaction to our patients' questions and problems are almost reflex. Dr. Norman Jones noted that poor interpersonal interactions were so ingrained into our personalities that they in effect became "life long patterns". To eradicate such responses which are roadblocks to effective communication, he suggested the following set of rules to help us learn new and effective skills such as reflective listening.

1. Focus on the feeling instead of the content of the message. Very often, we missed the feelings expressed by the speaker as we were too preoccupied with the description of the situation or event. It was not what had happened to the speaker that was important but his reaction to and his feelings about what had happened to him.
2. Allow the speaker to ventilate his feelings and vocalise them. Most of us have been brought up to feel that it is wrong to express our emotions and we tend to be uncomfortable when we are faced with someone who is crying or frightened for example. Dr. Jones postulated that a considerable degree of anxiety arose from "free-floating" fear, a fear of something unidentified. By responding to the feelings that patients expressed, we may help them to identify these fears or sources of nervousness. When they become aware of and are able to identify such fears, the anxiety may subside.
3. Allow the patient to do the talking. This may be difficult as it requires a lot of patience. Furthermore, one is often hardpressed for time in general practice. But if the patient does not have a chance to talk, there is also very little opportunity for the doctor to pick up the patient's feelings.
4. Abstain from logic and assumption. Logic and assumptions are major obstacles to good communication as they are based on our perception of the problem rather than the patient's point of view. This reflects a lack of sensitivity to the patient's feelings and an inability to see the problem from his frame of reference. In any case, problems of living are not mathematical puzzles which can be solved by logic but problems which must be lived through.
5. Refrain from evaluations, opinions, judgements and analysis. Judging the feelings of the patient or jumping to conclusions about his problems prevent the patient from becoming aware of his own feelings and to explore them. If we were wrong in our evaluation, the patient might feel resentful or angry. If we were right, he might feel threatened or embarrassed.
6. Don't send solutions or advice. Such responses convey our lack of confidence in the patient's ability to solve his or her own problems and tend to encourage the patient to adopt a depedent role. This hinders the patient from developing his own inner strength to meet the challenges of life.
7. Avoid excessive questions. Dr. Alfred Benja-

min wrote that when one began a helping interview by asking questions and getting answers, one invariably ended up with asking more questions and getting more answers. Such a situation results in the questioner missing or ignoring feelings expressed as he is too engrossed in trying to reach a conclusion about the problem.

As doctors, we have to ask questions in order to get a clinical history. However, Dr. Benjamin advised that questions be used delicately and sparingly. They would then be useful tools. He cautioned against the indiscriminate use of questions which would hamper progress. Questions are dangerous when used threateningly.

Conclusion:

The skill of interpersonal communication can only be cultivated through practice and a determination to change our "life long patterns". Dr. George Beaumont observes that many patients have no intention of opening their hearts, have decided that they will solve their own problems with a drug "prop" and will go on searching until they find someone who is prepared to give it to them. This is in fact an experience which we are all familiar with.

However, Dr. Norman Jones feels that many people seeking help for their problems will test their helper during their first session by throwing out some feelings during the course of their conversation. If the feeling is not picked up, these people will go to someone else for help. He thinks that the main problem with most helpers is that their listening and responding techniques do not convey their interest and concern.

Dr. Dennis Jaffe contends that the essential element in all healing relationships may not be knowledge or technique but care, love and concern for the patient. He felt that the caring respect of the healer for the patient was a cornerstone of healing in the past but this had frequently been ignored in the modern doctor-patient relationship. He suggested that the public's complaints about medicine today might be the result of anger at not being respected and listened to.

The fruits of reflective listening are perhaps well described by these words of Henri Nouwen:

"Healing is the humble but also very demanding task of creating and offering a friendly empty space where strangers can reflect on their pain and suffering without fear, and find the confidence that makes them look for new ways right in the centre of their confusion".

Resource Readings:

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The child with vomiting

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INTRODUCTION

Vomiting and regurgitation are common symptoms in infancy. Vomiting is the violent expulsion of gastric content through the mouth and in the smaller children, also through the nose. Regurgitation is defined as expulsion of small amounts of oesophageal or gastric contents without marked increase in intra-abdominal pressure. Sporadic occurence of these conditions in an infant is normal and does not constitute a reason for alarm.

When do vomiting and regurgitation become pathological? An organic cause should always be looked for when it is persistent and associated with drowsiness, failure to suck well or failure to demand feeds. Bilious vomitus indicates intestinal obstruction. Failure to gain weight or loss of weight means that the vomiting is severe enough to interfere with the normal growth of the child. When vomiting is complicated by dehydration, urgent measures need to be taken to correct the water imbalance and ascertain the cause. Recurrent vomiting can be complicated by aspiration pneumonia and this may present with breathlessness and fever. In a newborn vomiting with failure to pass meconium is a common presentation of meconium ileus, Hirschsprung's disease and anorectal malformations. The classical triad of vomiting, visible peristalsis and a palpable mass in the right hypochondrium of congenital hypertrophic pyloric stenosis is well-known. Obviously vomiting is pathological when it is associated with seizure, bulging fontanelle and after an episode of head injury.

Physiology of Vomiting

The vomiting centre is located in the medulla dorsal to the cranial nerve nuclei, respiratory centre and spinal tracts. Dorsal to it is a chemoreceptor which sends stimuli to the vomiting centre when it is appropriately stimulated.

Vomiting is a reflex which has evolved genetically to get rid the animal of ingested toxins. It is not surprising that vomiting is one of the commonest symptoms of gastrointestinal disorders. In addition, diseases of other organs such as the brain, and equilibrium apparatus can cause vomiting. Drugs and blood constituents can cause vomiting also.

Causes of Vomiting

The causes of vomiting in childhood are listed in Table (1). Any pathology along the whole of the gastrointestinal tract can present with vomiting. Obviously the causes of vomiting at different ages are different and there are usually other associated signs and symptoms.

The non-gastrointestinal causes of vomiting and regurgitation are equally numerous. Other than feeding errors, infection is by far the commonest extra-gastrointestinal cause. It may be otitis media, pharyngitis, pneumonia, meningitis or urinary tract infection. Drugs should always be kept in mind. They include native medications and the medicines prescribed by practitioners.

Clinical Approach to a child with vomiting

In the management of any child with vomiting, a full clinical history with careful physical examination is mandatory. From the history, the severity of the vomiting can be assessed. Many organic causes of vomiting can be diagnosed on history alone. Physical examination should include examination of the milk bottle, the teat and the way the parent feeds the child.

As the causes of vomiting and regurgitation are different at various age groups, it is advisable to divide the clinical approach according to the age, namely the newborn and older children.

(1) Newborn

Vomiting and regurgitation are particularly common during this period. Broadly speaking, the vomitus may be mucoid, bloody and bilious.

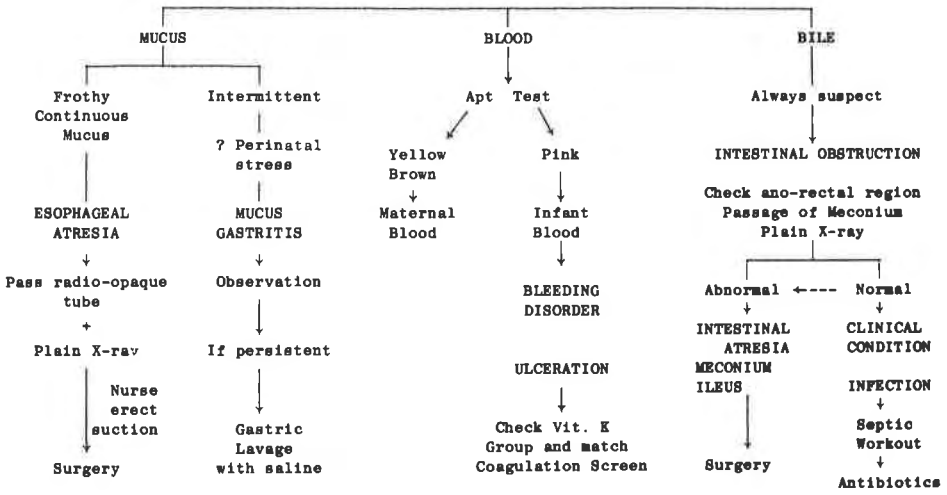
As shown in Figure (1), mucus vomiting in a newborn might be due to oesophageal atresia.

Appropriate measures should be taken early to confirm the diagnosis and treatment.

Bloody vomitus at this age can be due to swallowed maternal blood or haemorrhagic disorders of the newborn. Apt test will help in the diagnosis and subsequent management.

Bilious vomiting at this age always indicates some form of intestinal obstruction. The common causes of intestinal obstruction includes duodenal atresia, ileal atresia and anorectal malformations. Functional intestinal obstruction can be due to septicaemia, maternal drugs and prematurity. A plain abdominal x-ray is useful in determining the cause. It should be stressed that a newborn with bilious vomiting should be kept under closed observation and active measures should be taken to find out the cause. Early diagnosis and treatment is the key to successful management of the baby.

Figure 1
Vomiting in the Newborn



(2) **Older children** (Figure 2)

Bilious vomiting at this age group is also due largely to intestinal obstruction, mechanical or functional. The management is similar as it is during the newborn period.

Non-bilious vomiting can be due to feeding errors. Over feeding and aerophagy are common. Appropriate advice on the amount and techniques will usually result in clinical improvement. Other common causes are pyloric stenosis, hiatus hernia, oesophageal atresia and infection. A careful history and examination will help the doctor to distinguish one from the other. Appropriate radiological examination is sometimes needed to confirm the diagnosis.

A few common causes of vomiting will be discussed.

(a) **Intussusception**

It is due to the invagination of one segment of bowel caudally in the direction of peristalsis, into the lumen of the adjoining segment.

No obvious cause can be found in the majority of the cases. The classical presentations are vomiting, abdominal pain, bloody stools and a palpable mass in the abdomen. It is a surgical emergency and the intussusception needs to be reduced as soon as possible.

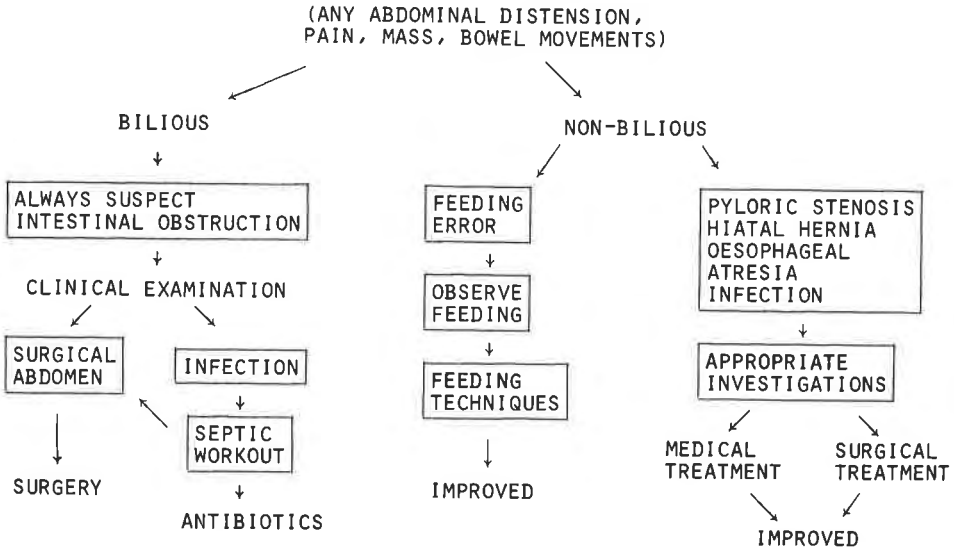
(b) **Hiatus Hernia**

It is due to the para-oesophageal herniation of the stomach or the sliding of the stomach through the hiatal opening into the thoracic cavity. Usually, affected children present with recurrent vomiting, failure to thrive, recurrent aspiration or anaemia. It can be treated by nursing the baby in an upright posture and by thickening of the feeds.

(c) **Congenital hypertrophic pyloric stenosis**

This is not an uncommon disorder. The pathology is due to the marked hypertrophy of the pyloric musculature. The typical presentations are

Figure 2
Vomiting in Older Children



vomiting, gastric peristalsis, failure to thrive and palpable pyloric tumour. Treatment nowadays is surgical.

(d) **Acute Appendicitis**

This is a common surgical emergency. Typical presentations are fever, right iliac fossa pain, vomiting and diarrhoea. The clue to the diagnosis is a good history and typical physical finding. Treatment is surgical.

CONCLUSION

Vomiting is a common symptom in children. Although occasional vomiting is normal, every measure must be taken to ascertain the causes. Life threatening complication such as aspiration, dehydration, electrolytes imbalance and acidosis should be prevented and corrected. Often, a child may perish because of these complications rather than the cause of vomiting itself. ■

TABLE (1)

CAUSES OF VOMITING/REGURGITATION

(I) Disease of the digestive tract that usually present with vomiting or regurgitation are:—

a. Esophageal
- Atresia with or without fistula
- Stenosis (malformation, external compression, peptic)
- Congenital vascular ring
- Duplication
- Diverticulum
- Achalasia
- Chalasia or gastro-esophageal dysfunction
- Hiatus hernia
- Foreign body
- Peri-oesophageal tumours
- Secondary structure (alkali)

b. Gastric
- Diaphragmatic hernia
- Pyloric spasm
- Hypertrophic pyloric stenosis
- Gastric malformation
- Gastritis

c. Duodenal
- Complete or incomplete duodenal occlusion
- Duodenitis

d. Intestinal
- Intestinal atresia or stenosis
- Meconimum ileus
- Malrotation
- Volvulus
- Duplication
- Intussusception
- Strangulated or incarcerated hernia
- Paralytic ileus
- Foreign body
- Gastrointestinal allergy
- Hirschsprung's disease
- Appendicitis
- Coeliac disease

e. Other abdominal organs
- Hepatitis
- Pancreatitits
- Mesenteric artery thrombosis

(II) Non-digestive tract diseases which may present with vomiting or regurgitation

a. Feeding error
- Over feeding
- Swallowing of air

b. Infection
- Both enteric and parenteral
- Any acute infection or septicaemia may cause vomiting

c. CNS pathology
- Infection
- Inflammation
- Increase intracranial pressure
- Intracranial haemorrhage

d. Metabolic Causes
- Renal failure
- Renal tubular acidosis
- Adrenal insufficiency
- Diabetic ketoacidosis
- Lactic acidosis
- Fructose intolerance
- Aminoaciduria

e. Drugs

f. Others
- e.g. habitual vomiting
- cyclical vomiting

Haemorrhoids: An Appraisal of Current Methods of Treatment

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INTRODUCTION:

Haemorrhoids are a common surgical problem which causes a considerable amount of suffering and social inconvenience. Being so common it was often held to be inevitable that one should suffer from 'piles' at one time or other in one's lifetime, the cause being ascribed to man's evolutionary adoption of the upright posture and the consequent varicosity of the rectal veins. This traditional concept of the etiology of haemorrhoids has become obsolete after Stelzner et al in Hamburg demonstrated direct A-V shunts in the anal submucosa and Thomson (1975)[1] suggested dysfunction of the shunts as an explanation based on his anatomical and clinical study.

The management of haemorrhoid disease too has swung from one extreme to the other. Methods ranged from the old and established techniques of injection sclerotherapy and various methods of surgical excision to recent use of elastic band ligation (Blaisdell, 1958; Barron, 1963[2]), maximal anal dilation (Lord, 1968)[3], or Cryosurgery (Lewis, 1969)[4].

In order to demonstrate the clinical pattern of this disease in the local community and to study the effectiveness of the repertoire of surgical remedies (excepting the dilation method) currently available, we have undertaken a retrospective study of 213 patients with haemorrhoids who had their piles treated at the Dept of Surgery Changi Hospital, over the period November 1980 to April 1982.

MATERIAL AND METHOD:

A total of 213 patients were studied. 68 were females (31.9%) while the majority were males (68.1%). Forty-three patients were between 11 to 20 years of age, 82 patients between 21 to 30 years while 35 patients were in their 4th decade of life. In the older patients i.e. those in the 5th decade or 6th decade and beyond, there were only 27 and 26 patients respectively. The average age of the haemorrhoid patient was 28.5 years. (TABLE I).

Racial composition was as follows:— Chinese: Malays: Indians: Eurasians, in the ratio 62:4:4:1 (TABLE II).

TABLE II: RACIAL DISTRIBUTION

ETHNIC GROUP	NUMBER	PERCENTAGE
Chinese	185	86.9
Malays	13	6.1
Indians	12	5.6
Eurasians	3	1.4

Presentation: (TABLE III AND IV)

Fourth-fifths of the patients presented with

TABLE I:
AGE & SEX DISTRIBUTION

TOTAL NO: 213	MALES: 153 (68.1%) FEMALES: 68 (31.9%)				
AGE IN YRS	11 to 20	21 to 30	31 to 40	41 to 50	51 & beyond
NO OF CASES	43	82	35	27	26
PERCENTAGE	20.2	38.5	16.4	12.7	12.2

MEAN AGE: 28.5 years

bleeding on defaecation while 20% complained of painful defaecation. Only a small proportion had associated constipation.

The majority (1/3) had their symptoms for more than 3 years, another third between 1 to 3 years and the remaining third, less than 1 year.

TABLE III: CLINICAL PRESENTATION

	Cases	Percentage
Bleeding on defaecation	173#	81.2
Painful defaecation	85	39.9
Associated constipation	13+	6.1

NB: # 45 of whom had assoc painful defaecation
\+ all within painful defaecation group

TABLE IV: DURATION OF SYMPTOMS

	Number	Percent
Less than 1 month	50	23.5
1 to 6 months	28	13.1
1 yr to 3 yrs	64	30.0
More than 3 yrs	71	33.4

Clinical Examination: (TABLES V, VI AND VII).

Clinical examination showed that the majority of the haemorrhoids were of the 2nd degree variety (60% of the total). The haemorrhoids were located in the primary position in 67% of cases while associated secondary haemorrhoids were found in only 1/3 of the patients. 70% were internal piles while the external component was also present in 30% of the cases.

Associated colo-proctologic disease was present in 10.8% of the patients and these were: polyps, fistula-in-ano, fissure-in-ano, anal tags, perianal abscess and the irritable bowel syndrome.

TABLE V: GRADING OF HAEMORRHOIDS

	Number	Percent
1st degree	26	12.2
2nd degree	126	59.2
3rd degree	61	28.6

TABLE VI: TYPE OF HAEMORRHOIDS

Components :	Number	Percent
Internal only	149	70.0
Internal & external	64	30.0
Position :		
Primary piles only	142	66.7
With associated secondary piles	71	33.3

TABLE VII: ASSOCIATED PATHOLOGY

	Number
Rectal polyps	8
Fistula-in-ano	2
Fissure-in-ano	4
Anal tags	7
Perianal abscess	1
Irritable bowel syndrome	1

Treatment:

The treatment modalities available at Changi Hospital were: (1) Injection Sclerotherapy, (2) Rubber Band Ligation, (3) Cryosurgical Destruction utilising Nitrous Oxide Gas, and (4) Surgical Excision by the method of Milligan and Morgan.

Upon admission into this series for management, all the 1st degree pile patients (26 cases) were managed by injection. This was done 3 times, separated by 2 week intervals. The early 2nd degree haemorrhoids were treated by either band ligation (21 cases) or cryosurgery (15 cases). No repeat treatment was given for this category of patients. Late 2nd degree piles (90 cases) were treated by formal surgical excision, as were the 61 cases of 3rd degree haemorrhoids.

When associated perianal conditions were discovered, they were treated at the same time.

RESULTS: (TABLES VIII & IX)

For the purpose of this study, all complications occuring within the period of hospitalisation were

TABLE VIII: RESULTS

HOSPITALISATION: 2 to 7 days (Average: 3 days)

COMPLICATIONS:

Early	Number
Slipped ligature	1
Acute fissure	2
Severe pain	3
Urinary retention	2
Secondary haemorrhage	0
Late	
Stenosis	2
Faecal incontinence	0
Recurrence (total)	23

TABLE IX: RECURRENCE

Method	Number	Percent
Injection	6/26	23.1
Banding	10/21	47.6
Cryosurgery	2/15	13.3
Excision	5/151	3.3

regarded as early complications. Late complications were defined as those occuring within the 6 months period of follow-up after discharge from hospital following treatment. A cure was deemed to have resulted if there was no recurrence of the disease after close observation during this period.

COMMENT:

Hawley (1973)[5] has stated that possibly as many as 40% of the population have symptoms due to haemorrhoids at some time in their lives. Being such a common disease, it would not come as a surprise therefore, to find that most people with this affliction would have tried some kind of 'home remedy' or haemorrhoidal cream/ suppository and found them ineffective before consulting their family physician. Thus when such patients finally seek medical help, the disease would have progressed to the stage when surgical treatment is often required. Our study confirms that 88% of haemorrhoidal patients referred to hospital for treatment have 2nd and 3rd degree piles.

Diagnosis of the disease should pose no problem for the medical practitioner. The difficulty usually arises when it comes to deciding on the many therapeutic options currently available. Nonexcisional methods are certainly popular but their effectiveness must be critically examined and their proper indications appreciated.

Injection Sclerotherapy has been practised for a long time and still has its adherents especially for bleeding and minor degrees of prolapse. Our study has indicated that the method has a significant recurrence rate (23%). This has occurred despite the full course of 3 injections given to each patient selected for this mode of therapy.

Band ligation, a method introduced by Blaisdell and popularised by Barron (1963) has become popular due to the simplicity of modern day apparatus designed for ejection of the band. The main complaint by patients is that it is often painful in the 1st post-treatment day. The method has been found suitable for 2nd degree haemorrhoids. From the high recurrence rate noted (47%) in this series, it would appear that repeated bandings may be required for the method to be truly effective.

Cryodestruction of haemorrhoids requires an initial capital outlay on equipment and works on the principle that freezing of the pile mass will cause it to necrose and slough off over a period between 1 to 3 weeks depending on the pile mass. The oft' reported complications of pain, discharge and smell have not been noted in our series. So long as early 2nd degree haemorrhoids are selected for treatment with this modality, complications can be expected to be minimal. Recurrence rate has also been notably low (13%) when compared to the previously described nonexcisional methods.

Conventional haemorrhoidectomy appears to be the treatment of choice for late 2nd degree, and large, protruding 3rd degree haemorrhoids. In all our patients, the Milligan and Morgan Technique[6] was used. The only significant complications noted were: a single case of post-haemorrhoidectomy bleeding, 2 cases of post-operative bladder retention and 2 cases of anal stenosis. This slightly increased incidence of post-operative complications was expected as excision of large volumes of tissue occur with this technique. A little more pain and discomfort which necessitates hospitalisation for the 1st three days after surgery can also be anticipated. However the very low recurrence rate of 3.3% (c.f. 1% in Greer's report[7]), justifies the continued use of excisional surgery.

CONCLUSION:

In this study of 213 patients treated for haemorrhoids, we have attempted to evaluate the effectiveness of the various methods available for the treatment of this very common disease. There is an indication for each method. Patient request alone should not dictate the choice. Rather, the choice of treatment should be tailored to the clinical findings. Although failures must necessarily be inherent in each treatment modality, recurrence after a well planned excisional haemorrhoidectomy is exceptional.

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Diagnostic Ultrasound in The Second and Third Trimesters of Pregnancy

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With the increasing awareness of the fetus as a patient amongst the contemporary obstetricians, diagnostic ultrasound has achieved a vital place in the proper and scientific management of the second and third trimesters of pregnancy. The place of routine ultrasound scan in all patients in the first trimester has been emphasised[1]. But it has a more important role to play in the second and third trimesters, because:

1. Many patients report to the obstetrician only in the second trimester and some even wait until the thrid trimester.
2. Some anomalies are more readily detected in these periods than in the first trimester.
3. There are pathologies that are exclusive to these periods of gestation.

The physician is often confronted with several vital questions in the prenatal management of his patient and despite his expertise, devotion and clinical acumen, he is unable at times to assure her that all is well. This is where diagnostic ultrasound would be of immense help which clears most of his dilemmas convincingly. The problem may centre around the fetus, placenta, liquor amnii, either singly or in combinations.

Evaluation of fetus:

1. Is there a fetus in the first place in a patient assumed to be pregnant. Could it be a case of vesicular mole or a rare case of spurious pregnancy.
2. Is the fetus alive?
   This is particularly pertinent in a case of an apprehensive elderly primigravida with or without a long history of subfertility who may have been worried because she had not felt the 'baby' well in the second trimester.
3. How many fetuses are there?
4. What is the lie and presentation of the fetus?
   This is sometimes difficult to determine clinically when there is gross obesity, rigid abdominal wall or polyhydramnios.
5. How old is the fetus?
6. Is the fetus growing normally?
7. Is there any fetal abnormality?

Evaluation of placenta:

1. Location.
2. Volume.
3. Anomaly.

Evaluation of liquor amnii:

This mainly involves determination of the volume of liquor and in majority of instances clinical examination alone is sufficient. However, more accurate estimation is possible with the help of ultrasound.

The presence or absence of a fetus in the second and third trimesters of pregnancy can be easily determined with the help of diagnostic ultrasound. The fetal cardiac activity can be readily picked up by Doppler ultrasound, A-mode echography, time-position mode or real-time scan. The latter can also detect fetal movements giving extra evidence of the diagnosis of continuing fetal life.

Given sufficient experience and full use of a good equipment, diagnosis of fetal demise is straight forward in most cases and can be done on the spot. Diagnostic accuracy to the extent of 100 per cent has been claimed using Doppler ultrasound alone[2]. The radiological signs of intrauterine fetal death appears much later.

When fetal death has occurred more than 48 hours previously, evidence of fetal death is also recognisable on the B-scan. This includes severe soft tissue edema, loss of midline echo complex, marked alteration of gross fetal morphology and overlapping of the fetal cranial bones. Ultrasonic detection of scalp edema surpasses that of radiography in that the latter is heavily dependent on specific limited view of the fetal head and good radiographic technique[3].

There are times when the lie and particularly the presentation of the fetus are difficult to determine clinically, such as, in cases of very apprehensive women with rigid abdominal wall, gross obesity and polyhydramnios. An ultrasonic

scan can readily solve this problem with 100 per cent accuracy. It is essential to be sure about the presentation of the fetus particularly in late pregnancy since in the event of a malpresentation, further investigations need to be performed without delay to exclude any coexistent fetal abnormality or abnormal location of placenta. The results of investigations can then be discussed with the patient and the optimal time and route of delivery can be decided upon well in advance.

The commonest indication of ultrasound scanning in the second and third trimester of pregnancy is determination of gestational age. Diagnostic ultrasound is more reliable in this respect than radiological and amniotic fluid study[4]. The parameter which is commonly used for the estimation of gestational age is the biparietal diameter (BPD). A multitude of nomograms drawn from large longitudinal studies of different population groups are now available. Besides the expertise of the ultrasonist and the quality of the equipment, the accuracy is heavily dependent upon the stage of pregnancy. The simple rule is the smaller the head, the greater is the accuracy. An exactitude of ± 10 days can be offered in 96 per cent of cases when the BPD does not exceed 78 mm[5]. In Asian women this value will perhaps lie at a somewhat lower level. The serial measurement of BPD growth velocity is an extremely dependable parameter and very useful in the management of patients with uncertain or doubtful dates.

Both static and real time scanners can be used. The author generally uses static scanner and A-scan display for the measurement of BPD but finds the use of real time scan useful and time saving when excessive movement of the fetus during scanning poses a formidable problem. The measurement of BPD using A-scan display is more reliable than obtained from a photograph of B-scan or directly from a real-time image because A-scan display is free from error caused by oscilloscope aberrations and lack of lateral resolution. However, it has been argued that the error is trivial and acceptable in view of time saved to complete the scan with a real-time scanner.

There is also difference of opinion about the landmarks used in the measurement of BPD from A-scan. It is the preference of the author to take measurements from the 'leading edge' of the echo from one parietal bone to the 'falling edge' of the echo from the other parietal bone as this is easily reproducible postnatally without any correction. However, reliable results can be obtained using 'peak to peak' or 'leading edge' to 'leading edge' measurements as long as the nomogram used for extrapolating a given BPD is prepared similarly and with the same assumed speed of sound.

It is to be noted that a reliable BPD is difficult to obtain when the sagital suture of the fetal head lies in the antero-posterior diameter of the pelvis or when the head is engaged.

The disturbance in the fetal growth pattern is a recognised pathology and early diagnosis is imperative for the salvage of the affected fetus. Clinical assessment of the fundal height, abdominal girth and liquor volume is extremely gross and may fail to recognise intrauterine growth retardation until late. Moreover, the growth of the uterus does not necessarily reflect the growth of the developing fetus. The problem is further compounded by the fact that the coexistence of obesity, rigid abdominal wall, abnormal lie of the fetus etc makes clinical assessment of uterine volume unreliable. The serial measurements of BPD, fetal trunk and fetal "Head to Abdomen circumference" ratio have proved to be extremely useful in the detection of intrauterine growth retardation at an early stage of the disease.

In recent years various types of growth disturbances have been identified ultrasonically and their etiological significance have been brought to light. The "late flattening" of BPD[6], a feature of asymmetric growth retardation is found in cases of placental insufficiency. On the other hand, "low profile" pattern of symmetric growth retardation may occur in fetuses affected by a genetic disease or chromosomal aberrations.

The H/A ratio is a more reliable parameter than BPD or abdominal circumference alone in the evaluation of anomaly in fetal growth.

If the brain mass of the fetus is an indicator of the subsequent mental development of the child and if a close correlation can be shown to exist between head growth and brain development, then there is a favourable case for the hypothesis that diagnostic ultrasound would be able to offer a reliable prognosis as to the subsequent mental outcome of the child who has faced an aberrant growth pattern during his intrauterine existence. This presupposes the fact that other features contributing to the mental development of the child remained unaltered. In fact, some evidence is available in support of this hypothesis which suggests that fetuses with elevated H/A ratio, indicating, thereby, nil or minimal effect on brain development, have a better prognosis with regard to catch-up growth and normal mental outcome[7][8]. However, carefully controlled study of a large number of cases is required to establish firmly the predictive value of diagnostic ultrasound in this regard.

Ultrasonic scanning is also helpful in the diagnosis of abnormal acceleration of fetal somatic growth, for example, in cases of maternal diabetes. In the case of rhesus isoimmunisation, the enlargement of the liver and spleen and the existence of fetal ascitis can be determined with a high degree of accuracy which along with the biochemical parameters enables the obstetrician to gauge the severity of the incompatibility so that vital and timely steps can be taken to the benefit of the affected fetus. The contemporary obstetrician is in a better position now than previously to elect the appropriate time for intrauterine fetal transfusion and/or termination of pregnancy by the suitable route.

A reliable prediction of fetal weight can be done ultrasonically. The existence of a predictable relationship between the growth of BPD and increase in fetal weight between 20 to 30 weeks of pregnancy has been documented[9]. But beyond 32 weeks, the values are too scattered to be of any clinical usefulness. Higginbottom et al[10] predicted fetal weight within 50 g from ultrasonic measurement of fetal trunk circumference which is impossible to obtain from any other clinical, biophysical or biochemical parameters.

One of the most important uses of diagnostic ultrasound is the detection of fetal morphological abnormality. With the increasing sophistication of equipments and growing expertise in the field of obstetric ultrasound, a large variety of fetal abnormality can be diagnosed in utero by sonic visualisation of the fetus. This includes neural tube defects, renal anomalies, hydrops fetalis etc. the rarer abnormalities such as fetal ovarian cysts and duodenal atresia have also been diagnosed. The area which has caught considerable interest of contemporary ultrasonists is the study of fetal limb length with real-time scanner. This enables diagnosis of fetal abnormalities associated with reduced limb length and deformed limb as seen in cases of achondroplasia, Mermaid syndrome and phocomelia.

Amniocentesis and ultrasound scanning are complimentary to each other in the diagnosis of some forms of fetal abnormality, for example, in the case of spina bifida. Moreover, ultrasound scanning prior to amniocentesis early in the second trimester has markedly improved the safety of the procedure. In the author's series of 63 consecutive cases of prenatal diagnostic amniocentesis around 18 weeks of gestation only two bloody taps were recorded which subsequently yielded clear amniotic fluid when the procedure was repeated a few days later. None of the cases had any complication that could be attributed to the procedure. In all cases a thorough scan using both static and real-time scan were performed prior to amniocentesis. A thorough ultrasonic scan must also be performed immediately prior to amniocentesis in other situations, like photometric study of the amniotic fluid in the management of cases of rhesus isoimmunusation or the determination of amniotic fluid pulmonary surfactants for the prediction of fetal lung maturity. It is needless to emphasise that a comprehensive ultrasonic scan is an essential prerequisite for fetoscopic investigations.

As far as the placenta is concerned, the most important use of diagnostic ultrasound is in the determination of its location. This is of fundamental importance in the management of cases of antepartum haemorrhage. Ultrasound is the safest and perhaps the most precise diagnostic modality in the localisation of placenta. The inclusion of grey-scale imaging has significantly improved placental visualisation. The unbroken white line of chorionic plate representing the strong sonic interface between the placenta and liquor amnii must be deligently sought before making a diagnosis. Echoes arising from the anterior abdominal wall or a thick uterine wall may be wrongly interpreted as those arising from the placenta. The localisation of posterior placenta may be difficult because of the "sonic shadow" of the fetus on the placenta. However, help may be obtained by scanning at different planes, repositioning the patient and displacing the fetal head manually.

Some adjustment of the gain setting is often necessary for adequate visualisation of placenta. At low sensitivity one may fail to visualise the placenta. On the other hand, at high gain settings far too many echoes may make the picture incomprehensible. Another important fact in the ultrasonic localisation of placenta is to ensure that the bladder is full. This provides a "sonic window" for the detection of low intensity placental echoes and also displaces the fetal head from the region of internal os so that the incidental beam of echo can be made to directly hit the placental parenchyma producing useful echoes.

The measurement of the volume of placenta with the help of ultrasound may provide data which along with clinical and biochemical parameters helps in the assessment of the state of pregnancy at a given period of time. This is particularly relevant in the management of cases complicated by syphilis, diabetes mellitus and rhesus isoimmunisation.

One useful bonus of ultrasonic scanning in obstetrics has been the revelation of the fact of

changing anatomical relationship between the placenta and internal os during the course of gestation. A placenta found ultrasonically to cover the internal os in the second trimester may well "migrate" in course of time and may not be found in the lower segment at all when the pregnancy approaches term[11]. Therefore, when a placenta is seen ultrasonically to cover the internal os in the second trimester, it is imperative to repeat the scan late in the third trimester before a diagnosis of placenta praevia is made.

It is clear from the foregoing discussion that ultrasound scanning is an essential diagnostic modality which can be used with unquestionable benefit for the management of patients in contemporary obstetrics. No doubt is cast upon physician's clinical acumen but biological limitation of human senses calls for the need of his own technological inventions to supply informations that were heretofore unobtainable. In this era of preventive medicine, it is comforting to take cognizance of the fact that routine ultrasound scanning in all pregnant women can and will unmask a host of pathological conditions so that timely and deliberate steps can be taken with the full courage of convictions to rectify or at least to minimise the inimical effect of an existing pathology. This also reassures the population of expectant mothers and protects their unborn children.

ACKNOWLEDGEMENT:

I sincerely express my deepest gratitude to my former Chief, Professor A.C. Drogendijk of the Institute of Obstetrics and Gynaecology, Erasmas University, Rotterdam, Holland, for his kind help and inspiration which continues to flow unabated to this day despite the enormous geographical distance.

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Australian Family Physician

Australian Family Physician is the official journal of the Royal Australian College of General Practitioners. It is published monthly and appeared first in its current format in 1972.

Prior to that year the RACGP College Council, in October 1971, made the decision to replace a publication called **Annals of General Practice** by a more ambitious journal. The purpose of the new **Australian Family Physician** as it then was, was described in the Editorial of the first issue by Dr. Rex Walpole, Foundation Chairman of the newly formed Editorial Board.

Dr. Walpole said: "College Council is aware that the whole purpose of the College is the establishment and maintenance of high standards of family practice. These can be achieved only through education. It has therefore established a blueprint whereby the new journal becomes one of its important educational tools".

Now, **Australian Family Physician** is a bright, easy to read publication circulating to all general practitioners in Australia.

Each issue is built up around a theme comprising three or four articles and there are also special one-off feature articles.

In addition there are a number of recurring practical medicine pages designed and written in such a way that they are of immediate benefit to the general practitioner in his surgery.

ARMS OF THE ROYAL AUSTRALIAN COLLEGE OF GENERAL PRACTITIONERS

The arms of the College are officially described as follows:— "Argent on a Cross Gules a forked Staff entwined with a Serpent Or between four Mullets of six points Gold And for the Crest On a Wreath Azure and Gules A Golden Wattle Tree flowered and leaved proper, Mantled Azure and Gules, doubled Argent. On the dexter side a Kangaroo proper and on the sinister side a Unicorn Argent armed unguled crined and tufted Or."

The red cross on the shield is the universal badge of the medical services to which we belong, while the staff and serpent, the ancient emblem of Aesculapius, are guarded by four stars signifying the Southern Cross; each star has six points to represent the six Faculties of the College.

The crest is the living golden wattle tree in full bloom. This Australian tree has its place in the pharmacopeia and it stresses the fact that the College is a vital growing entity.

The wreath on which the crest stands and the mantling are blue and red, as is the College gown.

The supporters are our Australian Kangaroo and the British unicorn, which possesses fabled healing properties.

The motto — Cum Scientia Caritas — has been adopted with the generous concurrence of the College of General Practitioners. This common motto, which may be translated "with skill, tender loving care", and the supporters, are witness to the close relationship with our parent College.

THE ROYAL AUSTRALIAN COLLEGE OF GENERAL PRACTITIONERS

Note: Information kindly supplied by Mr Russell Lea, Manager, Publications Division.

Home Study Section

The College's Home Study Programme was started in 1979 to cater for the majority of its members who for one reason or another could not participate in the College's other educational programmes, such as seminars, in-depth courses, etc. In spite of some teething problems, the programme eventually established itself into a regular monthly issue.

College Council has resolved that as from this year (1983) the programme be incorporated within our journal in a separate "Home Study Section". This is the first issue of the Singapore Family Physician with this special section, which begins with a module on "Respiratory Problems in Family Practice".

Among the articles in this issue is one by the College President, Dr Victor L Fernandez. It is our aim and hope that more and more articles in this section will be written by family physicians/general practitioners.

Multiple choice questions on the articles in this issue will be published in the next issue. Members are urged to attempt to answer these questions to test their grasp and memory of the subject-matter, and if not fully satisfied with their own answers and scores, to read the articles again. Only then will the programme fulfill its purpose.

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Respiratory Manifestations of Pulmonary Diseases

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Respiratory illness is the cause of about one third to half of all consultations in general family practice. In this area of clinical practice, referrals to hospital are not common, and the attending practitioner often has to base his treatment on the presenting symptoms and signs rather than on diagnostic labels such as URTI, tracheitis or bronchiolitis.

Laboratory investigations such as chest radiographs are by and large the most commonly utilised but the family practitioner must be able to recognise the necessity of, and indications for, other tests like sputum examination, throat or nasal swabs, and spirometry which are readily available.

SORE-THROAT

This is probably the commonest presenting symptom in respiratory illnesses. It may be due to tonsillitis, pharyngitis or merely coryza. Although the majority of sorethroats are caused by viral infections, it is difficult to determine with certainty the difference between viral and bacterial infections of the throat without the use of bacteriological investigations.

Throat infections that appear to be due to a virus are best treated symptomatically, together with other supportive measures, while those that are thought to have a bacterial origin need to be managed with a course of antibiotics.

However, it must never be forgotten, especially by the family physician/general practitioner that the presenting symptom of sore throat may in fact be a guise for the patient who has an underlying psycho-social or emotional problem, such as marital disharmony.

COUGH

Cough is perhaps the most common presenting symptom in general practice, and is a frequent symptom of URTI, which accounts for 30-50% of all general practice attendances by both adults and children. Cough is very common among cigarette smokers, and seems to be accepted as "normal" by such people. This should not make the doctor less aware that the cough may be due to serious pulmonary disease.

A carefully taken history of the onset, character and duration of the cough, the presence, colour and consistency of any sputum, aggravating and relieving factors (if any), the time of day when the cough is worst, and any other accompanying symptoms such as wheezing would in most cases be sufficient for the practitioner to reach a reasonable differential diagnosis, which would be resolved further by a careful, thorough examination.

The cough reflex is a defensive one, keeping the respiratory tract clear of obstruction or irritation. Although the patient expects to be relieved as quickly as possible, treatment of the cough by stopping that defensive reflex is just a temporary measure, and must take second place to attempts made to find the cause of the cough. The wide variation of diseases of which cough forms a part — from sinusitis to carcinoma of the bronchus, from a nervous tick to an aortic aneurysm — must always be remembered.

The use of cough mixtures in URTI has been, and will remain, controversial. Although suppressant cough preparations have been shown by studies to be of little pharmacological benefit except in a few conditions such as smokers' cough and pleuritic cough, the popular belief that they are effective and their low cost must never be forgotten. Further, the sedative effect of such mixtures may very often serve to alleviate the patient's distressing symptoms.

The cough reflex can be initiated by a wide variety of stimuli. These include:

* Changes in the temperature of the air breathed
* foreign bodies, e.g. dust
* pressure on the respiratory tract
* secretions in the trachea or bronchi, and
* oedema or ulceration of the mucosal lining of the trachea or bronchi;

while in children, we must not forget as possible causes:

* cow's milk allergy
* milk aspiration syndrome
* congenital malformations of the respiratory tract, and

* psychological factors.

The productive cough serves to clear muco-pus from the trachea and bronchi, and should not suppressed. Mucolytic agents and steam inhalation, together with postural drainage in selected cases, help to facilitate this process.

As a general rule, any cough which lasts longer than two to three weeks should be investigated.

HOARSENESS OF VOICE

Although every URTI can lead to 'laryngitis' or 'hoarseness', many patients rarely, if ever, develop this symptom. It appears to be commoner in smokers, in those whose occupation exposes them to dust or smoke, and in those whose work or singing puts a strain on the voice. It is often accompanied by an irritating paroxysmal, non-productive cough which is aggravated by talking, swallowing or inhalation of cold air.

Acute laryngitis treated with voice rest, avoidance of inhalation of irritants and symptomatic remedies almost always resolves spontaneously within one to two weeks. Any persistence of the hoarseness after this period would indicate further examination and investigation to exclude more serious diseases.

DYSPNOEA

Dyspnoea is defined as difficult, laboured and uncomfortable breathing. It indicates a subjective feeling of disturbance of breathing which may be associated with anxiety or fear, and must be differentiated from tachypnoea and from hyperventilation, although dyspnoea can often be associated with either of the two.

Dyspnoea can be the result of at least three possible mechanisms functioning separately or in combination — increased work of breathing, reduction in ventilatory capacity, and an undue awareness by the individual of the act of breathing.

Numerous theories have been put forward on the causation of dyspnoea, but no one single theory has been unconditionally proven. Attempts have been made, however, to classify this symptom on clinical or physiological bases, according to the severity, aetiology, or even according to mode of onset and progression.

Clinically, dyspnoea can be classified into four main categories:

(i) ***Discomfort*** on breathing — seen in patients with restrictive or obstructive disease, left ventricular failure or with mechanical embarrassment.

(ii) ***Pain*** on breathing, e.g. in patients with pleuritis.

(iii) ***More rapid or deeper breathing,*** as seen in patients with anaemia, metabolic acidosis, etc.

(iv) ***Consciousness of breathing,*** as seen occasionally in patients with neuroses.

WHEEZE

This is a musical sound heard by the patient, or sometimes by others standing nearby, mainly on expiration. The sound is produced by air blowing through narrowed bronchi or when the walls of the airways are in apposition. The noise is mainly expiratory because the bronchi become shorter and narrower on expiration, and the high intrathoracic pressure during expiration makes the walls of the bronchi come into opposition. In bronchial asthma, however, the wheeze may be also inspiratory.

Wheeze is produced by high linear velocity of air flowing through narrowed airways, and may not be heard in advanced ventilatory failure where air flow is severely impaired.

The narrowing of the airways may be due to a number of factors which may be present singly or in combination — mucus in the airway lumen, swelling or oedema of the airway mucous membrane, or spasm of the airway smooth muscle.

STRIDOR

This is a musical noise caused by airway obstruction, either in the larynx, trachea or bronchi. It may be caused by neoplastic or inflammatory conditions of the airways, by gross mediastinal displacement, or by diffuse airways obstruction. It is usually inspiratory because the air flow is much more rapid during this phase than in expiration.

CHEST PAIN

Pleuritic pain is characterised by being worse on breathing and coughing, and occasionally on exercise or movements of the chest. The patient can often accurately localise the pain. ***Intercostal fibrositis*** causes pain which occurs mainly on coughing, rather than breathing. Examination reveals local tenderness, as is also seen in a ***cough fracture.*** Chest pain which is not affected by breathing may be due to ***intra-thoracic neoplasms,*** especially lung carcinoma. Here the pain is localised close to the neoplasm.

Finally, pain in the chest may be due to disease outside the respiratory system, e.g. coronary insufficiency, musculo-skeletal abnormalities, or referred pain from abdominal organs.

The Child with Cough

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The successful management of the child with cough is not achieved by simply prescribing a cough mixture. In the older days when medical knowledge was restricted, the only practical method of therapy was directly to reduce the cough, either by the use of a cough suppressant or by the use of so-called expectorants which are supposed to diminish the viscosity of respiratory mucus, making it easier to be coughed out. This led to the practice of poly pharmacy in cough mixture where ingredients were often incompatible with each other but, nevertheless, some doctors would swear to the efficacy of certain cough prescriptions in the successful treatment of cough in a child. This, of course, has led to the fantastic use of, at least, 600 cough mixtures, at the last count. Obviously, such a large number of nostrums claiming to cure cough, is mute testimony to ignorance of the problem of cough as well as the relative inefficacy of the majority of them. Furthermore, it is evidence of the degree of hypochondriacal sophistication which the present human race has reached in its headlong pace in social evolution, in that it demands such mixtures to stop their coughs, and equally, the pharmaceutical business has not been slow in realising this by supplying this artificial need. It is for the doctor to restore some semblance of balance so as to benefit their paediatric patients and not harm them, and for this to be done, it is essential to review the whole pathogenetic problem of cough in children, in the light of modern medical knowledge.

COUGH AS A SYMPTOM:

The cough reflex is a defensive reflex, and in most instances in a child, it occurs because the normal situation has been changed by some pathological process. Therefore, to stop that defensive reflex without reversing the aetiological pathological process is tantamount to conspiring with that pathology to make the child worse.

The cough reflex has an afferent arm and an efferent arm.

(a) Afferent:

This consists mainly of the nerve terminals of the vagus nerve situated strategically in the subepithelial wall of the trachea and bronchi mainly. Other end-organ sites include the pleura, oesophagus and the pharynx, the latter being subserved by the branches of the glossopharyngeal.

The stimuli which set off these afferent impulses for cough include:—

1. Foreign body such as dust, etc.
2. Changes in temperature of air breathed
3. Secretions in tracheo-bronchial tree
4. Pressure on the respiratory tract
5. Oedema or ulceration of the trachea and bronchi
6. Contraction of muscles of bronchi

The impulses are carried to the cough centre in the medulla in the nucleus of the tractus solitarius.

(b) Efferent:

The efferent arm consists of impulses to the muscles of respiration which are needed for the cough. Besides contraction of these muscles, the glottis is temporarily closed, so that pressure is built up high enough for the final expulsive act of coughing.

THE RESPIRATORY TRACT:

There are certain points in the respiratory tract that are important in the understanding of cough in children.

In the bronchi, the internal surface is covered by ciliated epithelial cells which assist in the expulsion of unwanted substances such as mucus and foreign material. Deep to these are the basal cells which rest on a basement membrane. These basal cells develop into and replace the ciliated columnar cells which may be destroyed by wear and tear. Next to the basement membrane is the muscle, interspersed with elastic tissue. Outside this is the adventitia consisting of connective tissue and blood vessels.

In the trachea and bronchi, there is, of course, cartilage, and large numbers of secretory mucous

glands. These glands become less as the bronchioles are reached. With irritation, the ciliated epithelium may be taken over mainly by the mucous goblet cells, so that there is loss of ciliary action.

The functions of the ciliated cells have been mentioned. The muscle is mainly responsible for keeping the tubes open so that free access of air to the lunge aveoli is achieved. In the bronchioles, the muscles may assist in the elongation and dilatation during inspiration which is mainly achieved by mechanical means as bronchioles constrict and the calibre is narrowed.

The role of the mucous glands in the physiology and pathology of respiratory tract in children must not be minimised. The usual view is that mucous glands produce mucus to entrap foreign body and warm up inspired air, which they obviously do. The mucus with entrapped foreign body is then expelled by the cilia and by the action of coughing. However, a study of the evolution of respiratory apparatus in animals to man, reveals that the mucus has a waterproofing action i.e. it prevents excessive egress or absorption of water in the environment, e.g. in eels and frogs where the skin also acts as a respiratory organ and is coated with a layer of mucus secreted by the mucous glands in the skin. In man, the mucus may play this primary role also, and the presence of cilia in areas where mucous glands are also present, i.e. the trachea and bronchi, allow the excess mucus to be expelled by ciliary action. In bronchioles there are normally no mucous glands and hence also no cilia are found. If this interpretation is correct, then in certain irritative states of the respiratory tract, e.g. bronchial asthma, mucous glands are found in large numbers in the bronchioles and since there are no cilia, this excess bronchiolar mucus plays a not inconsequential part in the pathology of bronchial asthma. Besides mucus, these glands under certain circumstances secrete cells such as polymorphs and eosinophils.

Finally, the calibre of the various parts of the respiratory tract in infants, children and adults must be realised, as it is vital to the causation of cough and dyspnoea. The cross-sectional area of the bronchus in an infant is about 1/8 that of the adult and in childhood is still about 1/3 that of the adult. The diameter of the main bronchi in a child of three years is about 7 mm and that of the terminal bronchiole being 0.12 mm, with the intervening tubes having intermediate values. It does not take much to realise that critical narrowing can occur in a child, and a corollary of this is that oedema of the mucosa will induce a greater pressure on the nerve-endings subserving the afferent arm of the cough reflex. Hence, the widening of the calibre of these small tubes will assist considerably in ameliorating cough.

With an understanding of the structure and function of the respiratory tract, and the mechanism of coughing, it is now possible to consider the causes and pathophysiology of the more common conditions seen in childhood which manifest themselves with the symptom of coughing.

THE SYNDROME OF MILD BRONCHIAL ASTHMA:

Bronchial asthma is well-known and the clinical categorisation includes wheezing in expiration as a sine qua non in its diagnosis. The expiratory wheeze is due to a degree of bronchial narrowing as a result of bronchospasm sufficient to diminish its calibre further during expiration. With increasing severity, less air is forced out so that finally the chest is held in a position of forced inspiration — the so-called barrel-chest. However, I contend that it is a little illogical to state categorically that when narrowing of bronchioles is of such an intensity till expiratory wheeze occurs, then we can call it a disease termed bronchial asthma. What if the narrowing is mild, and as such, expiratory wheeze has not occurred yet, but the patient is by no means asymptomatic? Obviously, such a mild state can occur, and when it does because of partial narrowing, then cough becomes the major symptom and not dyspnoea. This, to me, is mild bronchial asthma (MBA).

Why do these mild bronchial asthmatics cough? One does not have far to seek for the cause, because in classical asthma, there is excess mucus production besides bronchospasm. Engel (1962) has shown that there is almost a take-over by goblet cells in the epithelial lining of the tubes. Therefore, this excess mucus production causes oedema and tension in the wall, and at the same time blobs of mucus act as foreign bodies initiating the cough reflex.

The story of MBA in Singapore children is monotonously similar. A child usually had been perfectly well till about the age of 2-3 or over when sometimes after a viral respiratory infection or without it, develops a cough insiduously. On rare occasions, the child had been "chesty" since birth, or had been suffering from atopic eczema over the cheeks, neck, antecubital and popliteal fossae. There is no fever accompanying these attacks, although a superimposed infection may provide a fever especially if cough suppressants have been used, leading to mucus stasis or secondary infection. The cough is maximally troublesome in the early hours of the morning, when he takes

cold drinks or when he runs around a lot with evaporation of his sweat. These three predisposing causes may, on the surface, seem unconnected, but the common thread running through them is a lowering of the body temperature, which, in these susceptible children, causes an over-reaction of the mucous glands to over-produce excess mucus, which collects in the tubes with the inevitable cough. Once these mucus blobs are coughed out, very often visible in the accompanying vomit which they are prone to suffer from, the child is relieved, till sufficient mucus accumulates to start off the next round of coughing. Initially, the parents are not unduly worried, especially after procuring some cough suppressants, when the cough abates to be followed by a disappointing increased tempo in the cough. As the cough persists, usually the mother now getting a little worried and frantic, it wakes adults as well as the child patient from their sleep. Visions of PTB and other more serious lung pathology loom in the minds of the parents. The child's appetite may diminish though his physical activity does not, but by now, the parental fears and attitudes are subconsciously transferred to the child, who now understandably ets worse, because the fourth common trigger is of pyschological origin – worry, anxiety, and fear.

It is at this time that one sees them being referred for consultation. There is no doubt that the parents are highly worried and agitated, and the fear is that their child will "cough his lungs out" if the cough does not abate. After the usual story has poured out, enquiry about a family history, usually in the parents, of one or more of the following:-

(a) A similar history when they were young
(b) A history of severe bronchial asthma previously or still present
(c) A history of atopic eczema in the past or present
(d) A present history of hay fever

is almost always elicited, because without a doubt, mild or severe bronchial asthma has a strong genetic basis, the mode of inheritance being polygenic in nature rather than through genes of large mutant effect. In this regard, it would be easier to obtain corroborative history of mild bronchial asthma and its concomitants enumerated above in the family than of severe bronchial asthma. Even in the latter case, there is also no doubt of its familial incidence. Chong (1969) in an investigation of severe bronchial asthma in Singapore found the following:– (Table 1).

TABLE 1

	No. parents with asthma	No. sibs with asthma
Asthmatic patients (=94)	19	19
Controls (=3112)	83	113

The positive family history of bronchial asthma in parents and siblings of patients with bronchial asthma compared with non-asthmatic controls is extremely statistically significant. The almost certain family history when other minor criteria are taken into consideration when MBA is investigated should come as no surprise.

The reason for going into this syndrome of MBA at some length is that without its recognition, treatment is unsatisfactory. But with its correct diagnosis, management can then be highly satisfying. The most important part of the treatment after diagnosis is a full explanation of the disease to the parents who must be told:–

1. It is a genetic disease, the child having inherited the tendency to mucous gland over-reaction.
2. However, he will not get the reaction with just this genetic tendency because there must be external triggers present to set it in motion.
3. The external triggers must now be elicited – and lowering of the body temperature under the above circumstances is the commonest, but house dust inhalation, food allergy and psychogenic factors can also elicit the reaction.
4. That, under the circumstances, cough is inevitable and necessary or else the child will get worse. They should be happy that the child can cough – this is important in the therapeutic management. It would not harm the child but is protecting him.
5. How to avoid the triggers, including a degree of calmness on the parents' part.
6. Very often, a chest X-ray may have to be done and shown to the parents to convince them that the lungs are normal as indeed they are because there is no parenchymal disease. It is an affection of the tubes leading to the lungs and not the lungs themselves.
7. If any drug is to be given, a bronchodilator is the best "cough mixture" since this will allow him to cough out the mucus effectively.

After this explanation to the parents, the relief they get is obviously visible. A criteria of success in treatment is when the parents understand and are convinced by the doctor's explanation. I have

never come across a failure yet. The child gets better and the whole family lives happily again. The management is by no means easy because to achieve success, there must be rapport between the doctor and the parents, and the interview, to be successful takes at least ½ to 1 hour. MBA is the commonest and most recalcitrant cause of cough in children in Singapore.

I have mentioned cough suppressants and their ill-effects in this malady. Expectorants may help but usually are useless.

With regard to the final outcome of MBA, parents always ask the following questions:—

1. Will the child get better? The answer is yes if instructions are followed. If the cough persists, the child will also get better with time as the tubes grow larger in calibre with growth so that obstruction becomes less critical.
2. Will the child get classical severe bronchial asthma? The possibility exists and a few of my patients did eventually get classical asthma. However, the likelihood is less if there is insight into the disease on the part of the parents and the child.

OTHER CAUSES OF COUGH:

There are other causes of cough but they are not so common or so refractory as MBA.

Severe bronchial asthma with cough should be treated on the same lines as MBA, except that bronchodilators may have to be used more often. Even then, prevention of the attacks is more effective than the use of drugs. The cure of bronchial asthma is more dependent on the patient and his parents rather than on his doctor.

Respiratory tract infections, of course, cause cough, and here the treatment of the cough is the treatment of the infection, if that is possible, as in the case of bacterial infections. However, one must remember that respiratory tract infections in infants and children, are more often due to viruses rather than bacteria and antibiotics usually make them worse because of allowing super-infection to occur. Fever persists for as long as 2-3 weeks while on antibiotics, which when withdrawn, allow the temperature to return to normal.

The only legitimate use of cough suppressants in children may be in a few instances of "useless" coughs. Such "useless" coughs are commoner in adults than in children, e.g. the smoker's cough, pleuritic cough, etc. In whooping cough, a judicious use of cough suppressants can ease the child's incessant coughing and yet does not cause mucus stagnation. There is another group of children who cough but are relatively well without any consitutional symptoms and where there is no evidence of MBA. The cough is usually dry and the irritative stimulus comes from high up in the respiratory tract — the pharynx. Examination shows the throat to be perfectly normal and yet a careful history would elicit the predisposing cause, viz. food. Certain foods break through the waterproofing mucus barrier, and depending on their irritative effects, such as spices, or their osmotic effects, such as thick orange juice or peanut butter, the mucous membrane becomes unduly dry or oedematous, with stimulation of the nerve endings subserving cough. Although cough suppressants are useful for depressing such coughs and bring relief, even in such circumstances, it is infinitely better to discover the offending food, and prevent cough totally.

In the child, as in the adult, the treatment of cough is the treatment of the original condition that caused the cough. The cough is not only the warning signal of hidden disease but also the ally of the patient. To suppress it indiscriminately is ineffective and bad therapeutics. For those who still believe that cough mixtures are always effective and necessary, they should read the work of Gravenstein et al (1954) who found that even codeine, heroin and dextromethorphan did not reduce cough compared to placebos. The patients felt better and said they had less cough, while careful recording revealed that the cough frequency or intensity did not change. These powerful drugs engendered a sense of well-being, and the subjective improvement commented on by the patients was due to the hypnotic and euphorogenic qualities rather than the anti-tussive effects of the drugs, and of course, we all know that prolonged use would lead to addiction. ■

Chronic Cough

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Cough is the most common of respiratory symptoms. It varies in severity from a simple clearing of the throat to severe paroxysms that can incapacitate the afflicted person.

Physiology of Cough

Cough is a violent expiratory blast which takes place against a partially closed glottis. It helps to protect the tracheobronchial tree from the entry of foreign substances or the accumulation of bronchopulmonary secretions.

A cough is induced by an irritation of the afferent fibres of the pharyngeal distribution of the glossopharyngeal nerve; as well as the sensory endings of the vagus nerve in the larynx, trachea and larger bronchi. The smaller bronchioles are relatively insensitive to irritants. Cough may also be stimulated by impulses which arise from nerve endings located in the mucous membrane of the pharynx, oesophagus and the pleural surfaces as well as the external auditory canal. The impulses are transmitted to the 'cough centre' in the medulla, which sends impulses to the muscular systems of the chest and the larynx and a cough results. The stimuli may be inflammatory (infection); mechanical (smoke, dust or foreign bodies); chemical (irritating gases) or thermal (cold air). Thermal stimulation, however, generally occurs only if the tracheobronchial tree has already been affected by other irritants.

The act of coughing comprises four separate and distinct phases: (a) initial irritation induces (b) which is a deep inspiration (c) glottis is quickly and tightly closed while the expiratory intercostal and abdominal muscles contract forcibly so that the intrathoracic and intraabdominal pressures rise — "compressive phase" (d) after the intrathoracic pressure has reached a very high level, the glottis suddenly opens slightly. Since the intraabdominal pressure is now higher than the intrathoracic pressure, the diaphragm is pushed up, producing a violent explosive movement of air from the lower to the upper respiratory tract — "expulsive phase". As soon as the glottis opens, the soft palate rises and closes off the nasopharynx. Consequently any foreign material expelled from the respiratory tract by the force of cough enters the mouth and may be expectorated.

The intrathoracic airways are compressed concurrently with the onset of the expiratory blast of air. Air rushing through a greatly narrowed trachea with a high linear velocity (500 m.p.h. or 85% speed of sound) dislodges foreign materials or mucus and pushes it into the throat.

In the smaller bronchioles and in the lung parenchyma the air blast of the expulsive phase is so feeble that there may be little effect on any foreign material lying in these areas. However, collapse of small airways especially at low lung volumes, squeezes secretions into the larger bronchi.

A tracheostomy will thus reduce the effectiveness of cough as the glottic closure is short-circuited.

It is important to appreciate that the cough reflex is under voluntary control, and may be initiated at will or inhibited.

Central stimulation may be responsible for nervous coughing whilst voluntary inhibition of coughing will prevent effective clearing of the bronchial tree of excess secretions.

No one goes through life without an occasional cough. Many adults cough a few times on first arising in the morning because of secretions in the posterior pharynx and the trachea. Although the cough reflex is usually initiated in the tracheobronchial tree, the primary cause of the cough may be non-pulmonary e.g. L.V. failure → pulmonary congestion → cough.

In the evaluation of chronic cough, it may be helpful if note is made of the nature of the cough.

Is the cough persistent, indicating continuing pathology e.g. chronic lung disease or is it episodic, implying recurrent pathology e.g. repeated attacks of viral bronchitis.

Chronic Cough in Children

Common Causes

1) Recurrent bronchitis associated with acute respiratory infection

2) Wheezy bronchitis or asthma
3) Chronic upper respiratory infection
4) Foreign body
5) Whooping cough
6) Suppurative lung disease
7) Nervous cough

In infants and children the age at which symptoms initially develop may give a guide to establishing a diagnosis. A chronic cough which starts in the first few weeks or months of life is usually due to bronchitis or low grade pneumonia following a respiratory viral infection. These lesions may resolve slowly resulting in a cough that may persist for some months. Feeding difficulties in infants may cause milk inhalation and a persistent cough.

Recurrent cough in older children usually suggests recurrent bronchitis due to viral infections. If the attacks are associated with wheezing, asthma is the likely diagnosis. It is important to remember that in some young children, recurrent cough usually at night, may be the presenting symptom in asthma, and that initially wheezing may not be a prominent feature. School children, in their first few years at school, often develop recurrent bronchitis as a result of greater exposure to respiratory viral infections.

Other common causes include chronic upper respiratory infection with sinusitis, inhaled foreign body, and suppurative lung disease.

Pertussis and mycoplasma pneumonia may result in a persistent cough after the more severe manifestations of the illness have subsided. A modified illness with less severe symptoms can occur in individuals immunised to whooping cough.

Rarer causes of chronic cough in children include worm infestation e.g. round worms and hookworms and enlarged tuberculous glands compressing the bronchial wall.

Management depends obviously on the cause. In the child with bronchiolitis, rest and adequate hydration are important. Antibiotics are unnecessary unless there is evidence of secondary bacterial infection.

Finally we have the nervous or psychogenic cough. There are two main features: (a) there is a great deal of anxiety by the parents concerning the child's cough (b) there is no evidence of underlying respiratory disease.

It should be remembered that it is the mother who almost always reports and not infrequently interprets the child's symptoms. It is therefore essential to find out what she believes is the cause of the cough and why she has brought the child for consultation.

Chronic Cough in Adults

Chronic cough in the adult is a common problem facing the practising physician. As in children, a thorough history and clinical examination are essential.

A cough may be dry or wet. A dry cough often occurs in the early stages of a viral infection; it may occur in association with a bronchogenic carcinoma, as an early symptom of left sided heart failure or it may be due to a nervous habit. Most chronic coughs tend to be worse when the patients lie down at night, this is especially true in bronchiectasis and chronic sinusitis.

The character and quantity of sputum may suggest the diagnosis; e.g. the mucoid sputum in chronic bronchitis, and the copious purulent often bloodstained sputum in bronchiectasis.

Often, the onset of cough is insidious, so that the patient is unaware of the symptom; this is particularly common in heavy smokers. It needs to be emphasised that any change in the character of a cough may indicate bronchogenic malignancy.

As a general rule, if a cough does not clear within three weeks, a chest x-ray should be taken to exclude tuberculosis, carcinoma of the bronchus or other serious pulmonary disease.

Chronic persistent cough has been defined as one that "eluded the diagnostic and therapeutic measures of at least one referring physician and remained persistently troublesome to the patient for at least 3 weeks."

The spectrum of causes in the patient with a chronic cough and a negative chest radiograph includes upper respiratory tract infection, post nasal drip, bronchial asthma, chronic bronchitis, gastro-oesophageal reflux, left ventricular failure and psychogenic cough.

Upper respiratory tract infections, such as maxillary sinusitis and infected adenoids have to be borne in mind. Some patients describe a cough that originates from a need to "clear the throat" — these patients usually have a chronic post nasal drip. The cough is often described as 'hacking' — a short dry frequently repeated cough, different from the deep 'loose' cough of patients with disease of the lower respiratory tract. It is worthwhile to remember that x-rays of the sinuses may not show any radiological changes so that diagnosis must be based on a clinical assessment.

When the physical examination and chest radiograph are negative, pulmonary function tests and methacholine or histamine inhalation challenge tests should be the next tests to be ordered. The latter (which gives an indication of the presence or absence of hyperreactivity of the airways) may be the only means of identifying some asthmatics

in whom no wheeze is present and who have normal baseline pulmonary function studies.

Cough occurs in 70-90% of lung cancer patients at some time during the course of their disease. What is the place of bronchoscopy in a patient with a chronic cough and a negative chest radiograph? We would agree with the observation that although "a chronic or changing cough is commonly associated with bronchogenic carcinoma, it is almost never an **isolated** finding and bronchoscopy performed as part of the investigation in patients presenting in this manner is usually negative or non diagnostic".

Fibreoptic bronchoscopy may be indicated in a patient in whom the cause of the chronic cough is not identified by the clinical history and examination, chest x-ray, and pulmonary function (including histamine inhalation challenge) tests. Rare causes such as foreign bodies, broncholiths, bronchial strictures, tracheobronchial tumours and tracheopathia osteoplastica have to be excluded in a patient thought to have a chronic cough of psychogenic origin.

As in the management of patients presenting with other symptoms, definitive treatment of cough depends upon determining its precise cause and instituting specific therapy for the underlying disorder. If specific therapy does not "cure" the cough, the presumptive diagnosis is either wrong or the therapy is inadequate. ■

Radiological Investigation of Lung Diseases: Current Practice

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It is comforting to note that despite a profusion of new imaging techniques and complicated procedures, the cornerstone of radiological diagnosis of lung diseases still is the plain chest x-ray examination. Chest radiography makes up about half the workload of the radiodiagnostic department of a general hospital and in private x-ray practice.

PA chest view

The standard procedure of x-raying the chest is the time-honoured posteror-anterior (PA) projection. The technique has undergone refinement over the years but its basic principles remain unaltered and bear repeating. Correct positioning of the patient with proper centring of the x-ray beam is mandatory. The radiograph must be sufficiently exposed and penetrated so that the thoracic discs can just be made out and the lung markings behind the heart clearly visible. The film is taken with the respiration completely suspended in full inspiration. It can be seen that if these criteria are strictly applied, many chest films will not pass the test. Thus, chest radiography, though seemingly simple to execute, demands much of the expertise and experience of the personnel as well as of the x-ray equipment.

A major refinement of chest radiography is the introduction of high kilovoltage (140-150 kVp) in contrast to the conventional use of 60 – 80 kVp. To eliminate the greater x-ray scatter associated with this method, the use of a stationary grid is essential. This technique affords a great range of tissue visibility and any alteration in the lung structure is better demonstrated. High kilovoltage technique is often preferred for the detection of small lung cancer which may otherwise be obscured by overlying osseous and mediastinal structures.

Additional views

The consensus of opinion is that a PA chest view alone suffices for routine screening, especially in the case of patients below the age of 40. However, whenever chest disease is suspected, a more thorough examination is afforded with a supplementary lateral view. This gives a less obstructed view of certain areas of the lungs, notably the postero-inferior angles. When a lung lesion is present, the lateral view will impart additional information, particularly in respect of its appearance and location. The technique of lateral radiography is standardised in contrast with oblique chest studies where the angle of projection is subject to some variation. Thus, the lateral view which is readily repeatable in follow-up studies has virtually replaced oblique views which are now mainly used for the detection of rib fractures.

Other supplementary views may be asked for by the radiologist. A useful adjunct is the lordotic antero-posterior projection for the visualisation of apical and upper zone lesions, particularly when small lesions are hidden by the ribs and clavicle on the PA film. The projection is also of value for the study of lesions situated anteriorly, as in the case of middle lobe or lingular collapse or consolidation.

Lateral decubitus views have certain useful applications in the investigation of pleural effusion. The patient lies on the affected side and a PA projection of the chest is made using a horizontal x-ray beam. This method enables small effusions (less than 100 ml) to be identified and helps to confirm the gravitational mobility of larger collections.

As mentioned earlier, standard chest films are always taken in full inspiration so as to visualise as great a volume of the lungs as possible. Radiography taken in maximal expiration is at times indicated and may provide confirmatory evidence of a pneumothorax or obstructive emphysema. For instance, when a small pneumothorax is suspected, forced total expiration causes maximal deflation of the lung and the volume of air in the pleural space (if present) enlarges in turn, thereby causing a wider separation of the visceral and parietal layers of the pleura.

Supplementary investigations

Conventional tomography is a valuable radiographic technique as it blurs out obstacles to visibility such as overlying ribs and considerably enhances radiographic contrast. It is the method of choice when plain films reveal a peripheral pul-

monary nodule. The method usually entails the use of coronal tomography and demonstrates with clarity the contour of the coin lesion, the presence of cavitation and calcification and the condition of the surrounding lung. Lateral and oblique tomography are sometimes used, especially in studying and locating a pulmonary mass in relation to the hilum, the large pulmonary vessels and pulmonary fissures.

Bronchography is a procedure for visualising the bronchial tree with the use of a contrast medium, Dionosil (Propyliodone). The procedure has lost much popularity in the past two decades with the advent of newer techniques, such as fibreoptic bronchoscopy, catheter bronchial brushing and percutaneous lung biopsy, which offer a more definite diagnosis. Several methods for bronchography are available, all of which are satisfactory in skilled hands. Bronchoscopy is indicated in confirming the diagnosis of bronchiectasis if surgical resection is contemplated. It is also used in the investigation of the relatively uncommon conditions of congenital bronchial anomalies and bronchial adenomas.

Newer ancillary methods

Percutaneous needle biopsy has gained popularity in recent years and can be performed in any department with an image intensifier. Under local anaesthesia and fluoroscopic control, a fine needle (usually a 18-gauge spinal) is introduced through an intercostal space into the lesion in the lung and samples are taken for histological study. The main complications using this particular technique are pneumothorax (20%) and transient haemoptysis (5%). A histological diagnosis can be achieved from the aspirated material in about 90% of patients when a skilled radiologist works in close collaboration with an experienced cytologist.

The main value of percutaneous lung biopsy lies in its use for confirming a suspected diagnosis of bronchogenic carcinoma. It should, however, be noted that this procedure has a significant number of false negative results. Some respected authorities such as Fraser and Pare' have, therefore advocated that an early thoracotomy should be carried out when a coin lesion is found in patients between 40 and 60 years and having a smoking history.

The most sophisticated radiological investigation is without doubt the **computed tomography** (CT) of the thorax. It essentially entails narrow axial sections of the chest and many such slices are required for a complete examination. Due to the prohibitively high cost of the equipment and a protracted examination time (about ½ to 1 hour), the CT examination is costly. Because of this and the fact that computed tomography has its own diagnostic limitations, it is important that careful selection of patients is made before subjecting them to CT scanning.

In the context of the diagnosis of lung diseases, CT studies are eminently suited for the detection of small metastases as these are usually not picked up by other radiological means. It has thus assumed an important place in the diagnostic work-up of patients with cancers which commonly metastasise to the lungs such as colonic and renal carcinomas and osteosarcomas.

As a result of increasing collective gain in experience, it has been found that the CT scan is a very sensitive method of assessing the operability of lung carcinoma, the commonest local form of cancer. It gives a clear picture of the spread to the regional lymph nodes as well as the involvement of the mediastinum and pleura. CT scanning is also the most reliable single method in the investigation and staging of thoracic lymphoma and shows the extent of the disease which may involve, besides the lymph nodes, the lung parenchyma, pleura and bone.

Miniature radiography and mass screening

Miniature radiography consists of photographing the fluoroscopic image of a body structure like the chest using small films (70 or 100 mm square). While admittedly much cheaper than large-film radiography, this technique, also referred to as photofluorography, gives rise to some loss of clarity and detail of the lung structure. Another drawback of the technique is the relatively high radiation dose received by the patient. Whereas the skin dose in the case of large PA chest radiography is 10 – 20 millirads (negligible when viewed against a local natural or background radiation of 100 mrads per year), the skin dose in miniature radiography of the chest is quite considerable, up to 300 mrads. For these reasons, it is recommended that this means should only be used in chest screening of adults, principally in pre-employment and related medical examinations.

The use of mass chest radiography using either large or miniature films as a screening procedure has currently been a subject of debate. For many decades, mass surveys have been carried out for detecting tuberculosis. The value of this form of survey has been subjected to close scrutiny by many competent authorities. The consensus is that for a community with a low incidence of active tuberculosis (as is the situation in Singapore), the

small positive yield does not justify the cost in terms of radiation exposure, money and time of medical personnels.[1]

Similarly, x-ray surveys among the general population for the detection of other pulmonary diseases have not proved sufficiently rewarding. However, a case may be made for radiographic screening in the early detection of lung cancer if this is conducted in a high-risk group using a comprehensive radiographic technique, independent double reading and stringent diagnostic criteria.[2]

A final comment is on the importance of retaining all old chest radiographs. This is particularly pertinent in the management of tuberculosis and coin lesions. Previous x-ray records can be of immense help in determining whether the tuberculous lesion is active or quiescent. In the more vexing situation of coin lesions, sufficient data may be made available for a firm diagnosis of a benign lesion or strong suspicion of a malignant disease.

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PERSONAL OBSERVATION

A Tale of Two Headaches

DR DANIEL L H WONG MBBS (Malaya)

Introduction

Headache is one of the commonest complaints presented to Primary Care Physicians. Although only rarely do these patients have worrisome causes, it is a considerable task for the physicians on the frontline to detect these, so that further workup can be planned for proper diagnosis and management. The following two cases highlight some of these problems.

Case No 1

MKW, a 30 year old system analyst, presented to me on December 16, 1982 with 6 days history of right-sided headache. The headache was mainly felt over the parietal region and it affected her day and night. There was no associated vomiting or constitutional symptoms. She received treatment twice; on the second day and on the fifth day since the onset of the headache. The pain persisted and woke her up a couple of times at night.

Clinical examination on the sixth day revealed a fit young lady, not in distress. Neurological examination was unremarkable. However, over the parietal region of the right hemicranium, there were about 8 papules of variable sizes, well scattered among her long hair. She then admitted the 'lumps' were there since the second day of illness.

A provisional diagnosis of Herpes Zoster was made. Because the author had not seen any Herpes Zoster over the above distribution before, the patient was referred to a neurologist, who in conjunction with a dermatologist, confirmed the diagnosis. The sensory segment involved was C2.

She was treated with Phisohex Shampoo, and Ponstan 2 tablets prn. There was no further complication. When last seen on January 22, 1983, she was completely pain free.

Case No 2

K H L a 34 year old electrician was first seen at my clinic on December 8, 1982, because of a 6 months history of right sided headache. The headache was paroxysmal and severe and it disturbed his sleep. The pain was felt most frequently at the occipital region, but sometimes felt around the frontal region. There was stiffness of neck accompanying the headache though the pain was not aggravated by neck movement. He was treated many times, by doctors and Chinese Physicians and the pain subsided when he took the analgesic, but came back again when he finished the medication. There was no associated vomiting or loss of weight.

Clinical examination showed a distressed man, who was very anxious. Fundoscopy revealed normal discs. Cranial nerves examination was essentially normal except for a mild conductive deafness on the right side. There were 2 small lymph nodes just below the angle of the jaw. Tonsils were enlarged and inflamed bilaterally, but looked benign.

Skull X-Ray was normal and cervical spine X-ray did not show any abnormality.

In view of the conductive deafness and enlarged lymph nodes, an ENT surgeon's consultation was arranged the following day. Post nasal space showed an area of granularity, especially on the right lateral wall and biopsy showed malignant tissue consistent with nasopharygeal carcinoma.

Discussion

Herpes Zoster is not uncommon in adults, but that affecting the scalp is not common. Juel-Jenson (1) in his series of 100 patients found that only one percent affected the C2 sensory segment. And in Hope Simpson's (2) series, the incidence affecting the C2 segment was 0.9 per cent.

Nasopharygeal carcinoma, though a rare disease among the Caucasians, is quite common among the Chinese. The common presentations are very well known:

i) glandular – presence of glands on the neck
ii) rhinological – when the patient complained of epitaxis or blood stained discharge
iii) Otological – deafness, earache or tinnitus
iv) neuro-opthalmological – diplopia, proptosis, headache and faceache

Prassad (3) in a series of 175 patients with histologically proven nasopharygeal carcinoma (University Hospital, Kuala Lumpur), found that 30 patients (17%) noticed headache or faceache as the first symptom and at the time of presentation to him in the University Hospital, 72 patients (41%) had faceache or headache. It is also noted that it was not the only symptom and patients seldom complained of it. Thomas and Waltz (4),

observed that 43 out of 381 patients (11.2%), had headache and faceache. Maltz and Conner (5) also found headache and/or faceache in 27 out of 81 patients (33%) with nasopharygeal carcinoma.

It was postulated by Prassad (3) that the headache was due to obstruction of sinus ostea or dural irritation, while faceache was due to infiltrating growth along the wall of the roof of nasopharynx.

Unilateral conductive deafness is considered one of the early symptoms (6), though in this patient it was mild and could only be detected on clinical examination. The conductive deafness is due to obstruction from oedema of the Eustachian cushion. In late cases the deafness is due to added paralysis of the levator palati muscle, as a result of infiltration (7).

Acknowledgements

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NEWS FROM THE COUNCIL

Meeting with the Minister for Health, the Hon'ble Mr Howe Yoon Chong

On 24 January 1983 officials of the College and the Association of Private Medical Practitioners of Singapore had a meeting with the Minister for Health, the Hon'ble Mr Howe Yoon Chong. The College was represented by Drs Victor L Fernandez, Frederick Samuel, Lim Kim Leong, James Chang and Alfred Loh. We had discussions of Primary Health Care, Preventive Medicine, Health Education and the establishment of Community Hospitals. The most significant view held by the Minister was the importance of re-establishing the role of the "family doctor". The Minister felt that the image of the "family doctor", respected and trusted by his patients must be maintained and that the profession must do its utmost to weed out the "black sheep" and re-affirm its role in society.

Meeting with the Minister for Labour, the Hon'ble Mr Ong Teng Cheong

Officials of the College, the Singapore Medical Association and the Association of Private Medical Practitioners of Singapore were invited to meet the Minister for Labour, the Hon'ble Mr Ong Teng Cheong on Friday, 25 February 1983. The College was represented by Drs Victor L Fernandez, Lim Kim Leong, Philbert Chin and James Chang. From the Ministry of Labour were the Minister for Labour, the Hon'ble Mr Ong Teng Cheong, the Minister of State (Labour) Dr Wong Kwei Cheong and the Parliamentary Secretary (Labour) Mr Eugene Yap and other officials also present were Dr Chau Sik Ting M.P. for Thomson, Dr Phoon Wai Hoong and Dr Lai Chan See. We had a 3-hour discussion on the Industrial Medicine Course conducted by the National Productivity Board, the Statutory Medical Examination, Designated Factory Doctors and Continuing Medical Education.

The members present were free and open in their discussion and we stated our principles and opinions on the various topics. A joint memorandum by the three Medical Bodies on the discussion has been sent to the Minister for Labour.

ANNUAL GENERAL MEETING

The 12th Annual General Meeting of the College of General Practitioners Singapore will be held on Sunday, 26 June 1983. Election of Office Bearers for the 9th College Council (1983-85) will be held at the A.G.M.

Eleventh College Examination for Diplomate Membership

The Censors Board has announced that the College Examination leading to the award MCGP(S) will be held in October 1983. Further details will be published soon. Interested candidates may contact Mr F B Vaz, Administrative Secretary of the College.

Tenth WONCA World Conference on Family Medicine: May 20-24, 1983.

All details have been finalised. Registrations have been coming in steadily over the last few months. Todate more than 1,000 registrants from 30 countries have been enrolled.

The Opening Ceremony will be officiated by the President of the Republic of Singapore, His Excellency Mr C. V. Devan Nair. The function will be held at the World Trade Centre – Hall 3, and will be followed by an informal get-together and dinner at the same venue.

The Conference will be held at the Mandarin Hotel.

The Closing Ceremony will be held at the Neptune Theatre Night Club on the night of May 24, 1983. The Installation of the New President of WONCA and his Council will be held on the same night.

The Conference promises to be a success in terms of participants and quality of the Scientific Programme. In view of the importance attached to Primary Health Care in Singapore, the Council would like all members to be part of the Conference. So please register now.

MEDICAL NEWS

Spasm can cause brain infarct

CEREBRAL infarction is rare in those under 40. The aetiology is unclear in this group as most are unlikely to be vulnerable to atheromatous or thromboembolic disease.

Dr Richard Burns from Australia has reviewed 15 cases, in 14 of which he suggests that the pathogenesis is vasospasm.

Eight of the patients had a past history of migraine and all except two had a headache associated with the neurological episode.

CT scan showed an area of low density in 9 out of 14 patients.

The likelihood that the pathology is due to spasm is increased by the relative youth of the patients and the presence of a history of headache which is not a prominent feature on infarction due to other causes.

It is now accepted that angina can occur with normal coronary arteries because of coronary artery spasm.

By analogy, cerebral infarction could also occur due to spasm.

The definitive confirmation of this cause of infarction will have to await a method in which the calibre of the cerebral blood vessels can be examined during a migrainous episode.

There is no evidence that migraine prophylaxis can prevent infarction in these circumstances. (*Med J Aust* 1982 (i) June 26 p.556).

Hypnotics endanger morning driving?

PATIENTS on benzodiazepines would be well advised to avoid morning driving, says Dr T.A. Betts from Queen Elizabeth Hospital in Birmingham, U.K., who conducted an experiment to test driving ability the morning after taking either temazepam or flurazepam.

Twelve professional women were recruited for the test; each served as her own control taking a single night-time dose of one of the two drugs or placebo.

Next morning between 9 and 11 a.m., they presented to a test centre and their driving skill over a course was assessed.

Two types of tasks had to be performed. In the first, they were instructed to drive as fast as possible, weaving in and out of plastic bollards.

In the second, a gap acceptance problem was posed, where two bollards were placed in the middle of the course and they had to decide whether they were wide enough to pass through and, if so, they had to drive through without hitting them.

After taking flurazepam, subjects hit significantly more bollards than under placebo conditions.

In the second test, the women taking both drugs hit the side of the passable gaps significantly more often than when taking placebo. Dr Betts points out that temazepam is supposedly a short-acting hypnotic and so the results with this drug are particularly surprising.

What remains uncertain is whether patients adapt to repeat dosing and whether the effect is dose-dependent. Nonetheless, on the basis of his experimental evidence, Dr Betts says patients should be advised to avoid morning driving for the first few days of taking one of these hypnotics. (*BMJ* 1982 Sept 25 p. 852).

Fetal risks from rubella in pregnancy

THE effects of rubella during pregnancy are even more serious than is generally thought, according to a new study from London and Manchester. Until the study, the risk to the fetus after maternal rubella at successive stages of pregnancy had never been adequately assessed; estimates of the frequency of damage have ranged from as little as 5 per cent to as much as 50 per cent.

In order to conduct a large-scale prospective study, data was gathered from all pregnant women who had confirmed rubella reported to the Public Health Laboratory Service between January 1976 and September 1978. Each case was followed up throughout the pregnancy or resulting termination.

1,016 cases were confirmed, of whom 95 per cent had a rash and the remainder were symptom-free. Of the 966 women for whom the outcome of pregnancy was known, 54 per cent had therapeutic abortions and a further 4 per cent aborted spontaneously.

A total of 407 pregnancies continued, of which 2 per cent resulted in stillbirth — twice the expect-

ed number – and about half had severe abnormalities, the rest being normal fetuses.

Of the infants able to be tested for congenital rubella infection, 45 per cent of those whose mothers had a rash were positive for rubella antibodies. Every infant whose mother had symptomatic rubella between the first and twelfth week was infected.

The infection rate then fell to 25 per cent in children whose mothers were infected at the end of the second trimester, but then rose again in the last month.

However, of the 11 infants whose mothers were asymptomatic, none developed congenitial rubella.

It was possible to follow up 273 children after birth – about half of whom were seropositive for rubella. Defects attributable to rubella were found in 20 infants (all seropositive).

Five had congenital heart defects, all 5 born to mothers infected during the first eight weeks. The other 15 had bilateral sensorineural deafness, all exposed to infection during the 8th to 17th weeks. Seropositive infants also tended to have lower birth weights than the uninfected children.

The risk of abnormality following symptomatic rubella in the first four months of pregnancy was greater in this study than had previously been thought. The investigators believe that their results are more reliable because diagnosis was based on serological data rather than clinical findings – which can be inaccurate. Also, the extended follow-up detected abnormalities in infants who had appeared normal at birth.

Congenital rubella during the first 10 weeks was invariably associated with the appearance of abnormalities – multiple in those infected in the first 8 weeks. There was an unexpectedly high incidence of deafness when rubella infection occurred at 15-16 weeks.

The study also revealed that the traditional view that intra-uterine growth retardation only occurs with rubella infection early in pregnancy is incorrect. It is clear from the results of the London-Manchester group, that retardation also occurs with infection during the third trimester – although retardation at this stage does not continue after birth and may therefore have a different mechanism. (*Lancet* 1982(ii) Oct 9 p. 781).

When to take Pap smears

LONDON, Ontario, Canada – Cervical cancers could be detected sooner if the frequency at which a woman has Pap smear exams is based on the number of years she has had intercourse, rather than her chronologic age, according to Dr V. Cecil Wright of the department of ob-gyn, University of Western Ontario.

In his study of 232 women aged 18 go 47 years who developed cervical intraepithelial neoplasia (CIN), Dr Wright found that regardless of chronological age, women were most likely to develop CIN from 6 to 20 years after first intercourse. Diagnosis was made in 72 per cent of patients within the first 15 years, 88 per cent by 20 years, and 100 per cent by 30 years.

He recommended longer intervals between Pap smears in the first five years and after 20 years of first intercourse, but more intensive screening in the intermediate years.

The findings conflict with a revised Pap screening schedule recommended by a Canadian Govt Task Force on Cervical Cancer Screening Programme, which calls for women to have exams at intervals based on chronologic age. If two previous smears were negative in a sexually active woman over 18, further smears would be done every three years until age 35, and then every five years until age 60, under this programme.

Dr Wright pointed out that in effect this would consign some low-risk patients – i.e., young women – to yearly exams, while some in the higher-risk group would get exams at three- to five-year intervals.

Silent gallstones may not need prophylactic surgery

ALL medical students are taught that there is no such thing as the innocent gallstone and that in an estimated 50 per cent of cases some complication will ensue that will warrant cholecystectomy.

But the analysis of the results of a routine screening of staff at the University of Michigan in the 1950s suggests that silent gallstones were identified.

Dr William Gracie has now published his findings from following this group, looking particularly at the incidence of biliary pain and other gall bladder complications.

Biliary pain developed in 16 of those followed in the study (18 per cent of the total) – a much lower figure than has ever been noted in previous studies.

Of the 16 who developed symptoms, only 3 had biliary complications – acute pancreatitis in one and acute cholecystitis in two.

Because of the association between carcinoma

of the biliary tree and gallstones, it is also reassuring to find that no person in this study died of this complication.

Although these findings are striking and would appear to clear gallstones of the serious complications attributed to them in the past, the authors do point out that generalisation may be difficult because the study group were almost all white American men.

Certainly for this group it would appear that the common practice of routine prophylactic cholecystectomy for those found to have silent gallstones is neither necessary nor advisable.

The concept of prophylactic surgery is particularly criticised because the study also showed that those who do develop biliary pain do so soon after the silent stones are discovered and can be followed by a low-risk elective cholecystectomy.

The two favourable factors in the natural history of the illness confirm that a sensible policy would appear to be one of observation, limiting surgical intervention to those who develop symptoms. (*New England Journal of Medicine* 1982 Sept 23 p. 798)

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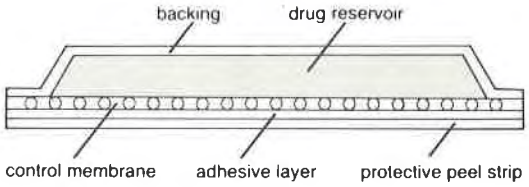

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