

RHEUMATIC DISORDERS, ALLERGIC REACTIONS & VENOMS

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The theme for this issue is on rheumatic disorders, drug allergic reactions and venoms. Arthritic conditions and rheumatism account for 5.6% of the patients seen in private general practice clinics and 4.3% of the patients seen in public sector primary care clinics in the 1993 One-Day Morbidity Survey in Singapore. Allergic reactions and venomous bites and stings are seen in the primary care setting but thankfully serious consequences are infrequent. This does not negate their importance.

FOOT PROBLEMS

Common foot disorders can be classified into three broad categories according to their nature and origin, namely, (a) biomechanical factors; (b) infections; and (c) general or systemic disease. The biomechanical causes of foot disorders can be subdivided into: (1) Primary intrinsic defects – affect the structure and function of the foot. This includes misalignment between the hindfoot and forefoot, which cause abnormal pronation or supination; (2) Primary extrinsic defects – affect the structure and function of the lower limb. Conditions such as genu varum (bow legs) and genu valgum (knock-knees) has an influence on the function of the foot; (3) Stress factors – including occupation, weight and footwear; and (4) Direct trauma – including sport injuries that are a result of biomechanical malfunction.

OSTEOPOROSIS

Osteoporosis is a systemic bone disease characterized by decrease bone mass density and micro-architectural degeneration resulting in the increased of skeletal fragility and therefore the risk of fracture. It is defined either by the presence of a fragility fracture or a bone mineral density (BMD) measurement which falls below a threshold level arbitrarily set at 2.5 S.D. below the mean peak bone mass of young adults. Identification of at risk groups for screening and intervention is the strategy to reduce osteoporosis in the vulnerable. Those with short stature, premature menopause, smoking and on steroids are at-risk groups. For the healthy, weight bearing exercise, avoidance of smoking and adequate calcium in the diet will help to reduce osteoporosis and fractures.

NON ARTICULAR MUSCULOSKELETAL PAINS

Non-articular musculoskeletal pain can arise as a result of tendinitis, bursitis, nerve entrapment syndromes, myofascial pain and fibromyalgia. It is important to differentiate soft-tissue rheumatism from other causes of pain arising from the joint. The location of pain and inflammation, and presence of pain only on active range of motion may help to differentiate a soft-tissue problem from a

joint problem. X-rays may be helpful by revealing joint problems although it must be pointed out that soft tissue problems can be the cause of pain and disability even when there is an underlying joint pathology.

DRUG ALLERGIES

These may be defined as unpredictable, dose-independent adverse drug reactions which are immunologically or IgE-mediated. They may be caused by (a) sensitization e.g., topical use of antibiotics; (b) delayed reactions e.g., allupurinol or anticonvulsants; (c) hypersensitivity syndromes e.g. allupurinol or anti-convulsants; and (d) cross-sensitivity reactions. Reporting such adverse reactions allows monitoring and sometimes removal of certain items from the market.

INSECT VENOM ALLERGY

Insect venom contains vasoactive, haemolytic and neurotoxic substances, all of which contribute to the clinical picture in allergic and toxic reactions. Venom allergens, which are all proteins, most of them enzymes, contain highly potent sensitizing substances which trigger the allergic reaction, eg. phospholipase A2 in the honey bee.

Insect venom allergy is a reaction to a single sting from a stinging insect. This is in contrast to toxic envenomisation, which refers to a reaction due to multiple (usually 4 or more) stings. Adults who have developed an allergic reaction to insect stings have a 30-70% risk of a systemic reaction to a subsequent sting if untreated. There is a 5-10% risk of subsequent systemic reaction in large local reactors. The place of venom immunotherapy (VIT) needs to be considered.

SNAKE VENOMS

Of the 2500 -3000 species of snakes worldwide, some 500 are venomous. These belong to four families – the Elapidae exemplified by the cobra and the kraits and in Singapore we have the king cobra and the banded krait; the Viperidae exemplified by the Russell viper and in Singapore we have the shore pit-viper, the Sumatran viper and the Wagler's pit-viper; the Hydrophidae or the sea snakes; and the Colubridae exemplified by the red-necked keel back which is common in South-east Asia and in fact kept as pets. Snake venoms have been classified as neurotoxic, coagulopathic, and myotoxic and these are respectively the result of the envenomisation predominantly from the elapids, the vipers and the sea snakes. Some species have more than one type of effects. The colubrids cause a slow coagulopathy.

The most important point to note is that snakes usually attack only when provoked. Also, the propensity to bite varies. Sea snakes are very toxic but seldom bite even when roughly handled. Vipers are aggressive and tend to bite. If the victim of a bite complains of diplopia or numbness it is likely to be due to a neurotoxin; if he has bleeding tendency and haemorrhagic blisters form it is due to coagulopathic venom; and if there is muscle pain and myoglobinuria then it is due a myotoxic venom. It has been said that in sea snake bites, the myotoxic venom works within two hours and if nothing happens at the end of that time, envenomisation can be ruled out.

Where a bite cannot be ruled out, a pressure bandaging-immobilisation first aid helps to slow down systemic envenomisation if the bite was truly venomous. The bandaging pressure to achieve is like that used in bandaging a sprained ankle. It should be firm bandaging but comfortable and can be left for some hours. Thankfully, some 80% of bites from venomous snakes are dry bites containing no venom. Anyway, if uncertain, it is better to apply pressure bandage rather than not.

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