LETTERS TO THE EDITOR

Diagnosis of Paget’s disease of bone

Currently available diagnostic imaging techniques contrast markedly with the methods of Diagnosis available at the time of Sir James Paget’s documentation of the disorder. Paget’s used only clinical and pathological information and his classical description has stood the test of time. Recently medical imaging such as computerized tomography and magnetic resonance imaging has led radiology to play a leading role in diagnosis. In most cases diagnosis will be straightforward. Problem may arise however, when the findings are atypical and particularly when the Disease is encountered in younger age groups.

The disease process is generally classified into three main groups, notably osteolytic, mixed and the sclerosed phases. The three phases may however be seen in the same patient. It is generally accepted that the initial stage of Paget’s disease is osteolytic which is reflected as a sharply defined area of lucency. This phase was originally described in cases of cranial involvement and was termed osteoporosis circumscripta. A similar process may involve long bones, where the advancing edge of the active osteolytic phase often assumes a “V” or “U” shaped margin in the diaphyseal cortex. This is an important diagnostic sign and may be the only clue to the diagnosis of early Paget’s disease. This is particularly so in younger patient where fusiform lucency expansion of the cortex may occur in the shaft of a long bone (usually tibia). The process is followed by a mixed appearance, which is characterized by enlargement of bone architectural disorganization resulting from periosteal new bone formation and thickening of trabeculae. An inactive sclerotic phase develops later.

In the active osteolytic and osteosclerotic phases uptake of radionuclide is a prominent feature and it has shown to precede the appearance of structural changes in the corresponding radiograph. As the disease progresses to the inactive sclerotic phase, scanning may show little or no uptake, but at this stage, the radiological findings are characteristic.

Computerized tomography (CT) is the most valuable technique for excluding sarcomatous transformation in Paget’s disease. It will also provide detailed information with regard to a soft tissue mass and the presence and extent of bone destruction. The axial sections provided by CT are particularly helpful in examining the spine, shoulder and pelvic girdle, where large lesions may otherwise be overlooked on the plain radiographs. It is also useful in confirming the disease in atypical case and in demonstrating the paravertebral soft tissue swelling which is sometimes associated with Paget’s disease and was previously described as extramedullary haemopoiesis.

Magnetic resonance imaging (MRI) of Paget’s disease correlates with the radiographic and CT findings with areas of decreased signal representing the enlarged sclerotic bone. Signal patterns in the medullary cavity vary depending upon the amount of normal marrow, fibrofatty or fibrovascular tissue present. MRI is not been used extensively in the management of Paget’s disease although the assessment of neurological complications in one area where it is of help. It remains to be seen what role MRI will play in the future management of Paget’s disease.

A definitive diagnosis can be made on clinicoradiographic finding but the unusual presentation and complication, such as sarcomatous transformation, may require the used of further imaging techniques.

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Current views on breast cancer imaging

Breast cancer is a common and deadly disease that metastasizes early in its natural history and may recur
It shows an incidence that increases with age. The disease is extremely rare in males, accounting for approximately 0.7% of all cases. Multidisciplinary teams that compromise breast surgeons, radiologists, pathologists and onco logists, should provide appropriate breast cancer management. Radiological imaging methods available for the diagnostic work-up of breast cancer include mammography, breast ultrasound and magnetic resonance imaging.

**Mammography (MMG)**

It was recognized more than 60 years ago that clinically occult breast cancer could be visualized on radiography. Technical developments in film-screen MMG coupled with evidence suggesting that MMG screening resulted in a reduction on breast cancer mortality led to the introduction and wide acceptance of screening MMG in several western countries by the 80s. Screening MMG aims to diagnose breast cancer early and is advocated in women above 50. The accuracy and positive predictive value of MMG are higher in older than in younger women. This may be related to the higher frequency of the disease and the reduced breast density on MMG seen with increasing age. There is no agreement on the case for breast cancer screening in women aged <50 as higher false positive rate in younger women often leads to unnecessary patient anxiety.

More cases of ductal carcinoma in-situ (DCIS) are being diagnosed with improved MMG technology especially in younger women. and currently there is concern that these lesions are being treated too aggressively as more than half may never become invasive or metastasise. Results, in late 2004, are expected to show whether digital MMG is as sensitive, specific and more cost effective than film MMG, and whether it will be able to obviate unnecessary biopsies.

**Breast ultrasound (USS)**

The accepted role of ultrasound is as an adjunct to mammography, and it has been advocated as a tailored examination to assess an area of mammographic and/or palpable abnormality rather than as a complete survey of the breasts. It has a poor spatial resolution in that microcalcifications in tumours are poorly detected. However, whole breast USS has been recently shown to be of value in the detection of multicentric and multifocal cancer when used pre-operatively in situations where breast conservation surgery is contemplated. USS is the initial method of choice in younger women with breast symptoms because it does not involve radiation. It is 96-100% accurate in the diagnosis of cysts, which constitute some 25% of all palpable or mammographically detectable lesions. However, current USS equipment is also able to detect malignant microcalcifications and is able to show axillary nodal involvement. Breast USS is increasingly sued in image-guided breast procedures such as tine needle aspiration cytology, biopsies and hook-wire localization of lesions prior to surgical excision.

**Magnetic resonance imaging (MRI)**

The ability of contrast enhanced MRI to demonstrate breast cancer was first reported by Hewang et al. Most authors subsequently report high sensitivity exceeding 98% in breast cancer detection using contrast MRI, with much lower specificity because some design lesions also enhance.

There are controversial issues regarding the benefits derived from mammography, while exciting developments in Breast MRI promise more accurate imaging in staging breast cancer and monitoring treatment response.

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A technique of minimizing catheter-associated urinary tract infections in patients with urinary incontinence

Urinary incontinence can be managed by closed urine drainage using indwelling catheter collection but very often this is complicated by catheter-associated urinary tract infection. These infections can be of severe consequences, especially in patients with spinal cord injury. Minimising or preventing these infections is a priority in the management of such patients. This can be achieved by a technique of closed drainage without indwelling catheter.

The technique
This technique is suitable for only adults. The materials required include: condom, urine bag, adhesive plaster, cotton bandage, surgical gloves.

Procedure
The condom is worn on the phallus and anchored to the penis with adhesive plaster. Its proximal ring is cut to eliminate tourniquet effect. A cotton bandage is applied over the condom, so that the glans is visible within the condom (figure 1). The bandage strengthens the anchoring adhesive plaster and has no tourniquet effect. The connecting tube of the urine bag is passed into the tip of the condom and the entering point is sealed with adhesive plaster. In this way a ‘funnel’ effect is created and this directs urine into the urine bag.

Precautions
The phallus may ulcerate as a result of irritation from urine and hypersensitivity to the adhesive plaster. This ulceration can be prevented by frequent inspection, change of condom and careful positioning of the adhesive plaster. A Foley’s catheter may be retained for a few days while allowing for any ulceration to heal.

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