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TUBERCULOSIS OF THE SPINE AND ITS SEQUELAE

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Tuberculosis of the spine may be broadly discussed under 3 categories: (a) typical presentation (b) presentation as a difficult clinical problem, and (c) atypical presentation.

TYPICAL PRESENTATION: This group of patients may have one or more of the following: spinal pain, abscess, gibbus, paraplegia. In disease of the cervical spine, paraplegia is common, especially in patients older than 10 years of age. When the disease affects the cervicodorsal or upper dorsal region, the patient may present with “asthma milare”. Radiographs often show narrowing of disc space with paradiscal erosion, a paravertebral shadow, and a kyphosis. In children, spreading in the thoracic spine is rapid, and x-ray may show an aneurysmal syndrome.

DIFFICULT CLINICAL PROBLEM: This group may be further sub-divided into

(1) As a rigid severe angular kyphosis with or without paraplegia. This usually occurs when the disease is already quiescent or healed. If paraplegia is present or impending, decompression is required.

(2) Extensive disease with deformity in old age: in this group of patients bone quality is very poor, and the patients cannot tolerate prolonged recumbency.

ATYPICAL PRESENTATIONS: include (1) disease of the neural arch, which is difficult to diagnose on plane x-ray, (2) as an epidural abscess of extensive arachnoiditis (pachymeningitis), when plain x-ray shows no abnormalitiy and (3) disease of the sacro-iliac joint.

Disease of neural arch can be diagnosed if there is awareness of its existence, and CT scan is very helpful. Epidural abscess and arachoiditis present with a very spastic type of paraplegia. Arachnoiditis is suspected if a myelographic column shows streaking and an irregular block.

Anti-tuberculosis therapy is the mainstay of treatment for tuberculosis of treatment for tuberculosis of the spine. The present trend is to use short-course chemotherapy of nine months to one year, with 2 drugs (INAH and Rifampicin) unless there is concern about antibiotics resistance in that locality ofr there has been inadequate antituberculosis treatment prescribed previously.

Situations where there is a strong indication for surgical intervention include the following:

a) Tuberculosis of the cervical spine, especially in children over the age of 10, because of a high incidence of paraplegia with conservative treatment alone.

b) A large abscess with significant pain not responding to anti-tuberculous drugs administered over an adequate period of time.

c) Extensive disease, e.g. over 3 or 4 levels.

d) Presence of a significant deformity, e.g. kyphosis or kypho-scoliosis.

e) Presence of paraparesis or paraplegia.

Whether anti-T.B. drugs alone or drugs together with surgical intervention is adopted, the only certain way of ensuring healing o fthe disease is achievement of radiological fusion.

A prospective controlled clinical trial by the Medical Research Council of Britain has produced 5, 10, and 15-year results comparing the treatment regimen of chemotherapy alone, chemotherapy with surgical debridement, and chemotherapy with radical excision and anterior spinal fusion (the Hong Kong operation). If "favourable status" is used to assess outcome, there is little difference between the 3 regimen. on the other hand, if fusion rate and kyphosis are used as assessment criteria, the Hong Kong operation gives significantly better outcomes in terms of fusion rate (97 versus 73%), and prevention of kyphosis.

Sequelae of acute tuberculosis of the spine:

1. Rigid angular kyphosis

This is a severe cosmetic deformity, with marked shortening of the trunk. There is sometimes concomitant deformity of the anterior chest wall. The segment of the spine above and below the kyphosis compensate by hyperlordosis. There is marked pulmonary compromise.

Correction of such deformity requires the application of a halo-pelvic apparatus, followed by anterior and posterior circumferential osteotomy to increase mobility at the kyphus as well as to prevent the internal kyphus from compressing the spinal cord during correction.

Gradual correction of the deformity is then performed by distraction using the halo-pelvic apparatus, with the patient awake and ambulant. After maximum correction is achieved, anterior strut grafting needs to be performed, together with a posterolateral fusion.

2. Late onset paraplegia due to compression by the internal kyphosis.

We have experience of a numbar of patients who have been diagnosed as tuberculosis of the spine and treated by a full course of anti-T.B. chemotherapy. 20 to 30 years later, the patient presents with paraparesis. There are 2 subgroups of such patients:

(i) Tuberculosis of the spine treated by chemotherapy but has not resulted in fusion. Lack of fusion results in instability, and if the kyphosis is substantial, it would gradually increase over the yars, finally leading to compression of the spinal cord by the internal kyphosis.

(ii) Compression of the spinal cord by internal kyphosis despite spontaneous anterior fusion. In this scenario, formal strut fusion by surgery has not been performed. Fusion progressively occurs with the antituberculous drugs. However, during the process, the soft bone formed initially becomes gradually retropulsed into the spinal canal. In time, the anterior column is fused, but the retropulsion causes marked narrowing of the spinal canal.

In this type of situation, particularly when the site involved is in the upper thoracic or in the lower lumbar spine, decompression can become a difficult problem. The conventional anterolateral approach to the front of the spine is difficult in the upper thoracic region because the chest cavity is cone-shaped, becoming very narrow in the upper part; and in the lower lumbar spine the big arteries and veins become bowstrung across the front of the internal kyphosis. This Department has described a posterolateral transpediculectomy internal kyphectomy since 1991 which gives direct assess to the internal

kyphosis after removal of the pedicles at teh apex of one side, allowing a very safe decompression under direct vision. This approach, however, does not give an adequate expansile approach for formal anterior strut grafting.

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