Juvenile Spondylarthritis

The condition known as juvenile spondylarthritis or "discitis" is a disorder of early childhood. It is characterized by sudden onset of pain in the back and narrowing of an intervertebral disc space with or without vertebral erosion. Systemic upset is slight, and the condition runs a short course with a good prognosis for general health and spinal function.

Formerly the disease was thought to be infective in origin, as the radiological features closely resemble those of known infective conditions. But nine years ago R. C. Jamison and colleagues did not accept this view, and now C. J. Alexander, from New Zealand, adds his dissenting voice to theirs. He reviews 120 cases and compares them with 131 cases of infectious spondylitis in adults reported over the same period. The infected cases had destruction of vertebral bodies, often severe and usually affecting both vertebrae, whereas the cases of juvenile spondylarthritis (or discitis) were never severe, and erosion was usually confined to one vertebra or was absent. The neural arch was sometimes destroyed in infectious spondylitis, never in juvenile spondylarthritis. Ankylosis was common in the former (70%), rare in the latter (about 5%), and the disc was usually destroyed in infectious spondylitis but in only three of the cases of juvenile spondylarthritis.

That this was not due to suppression of infection by antibiotics is shown by the fact that in half the cases antibiotics were not given, usually because the patients responded promptly to bed rest alone. Six patients with infectious spondylitis died of the disease, but none with spondylarthritis did so. The duration of juvenile spondylarthritis was usually shorter, commonly two to five weeks and occasionally up to 12.

A history of trauma was given by only three of the patients with infective disease but by 24 with juvenile spondylarthritis. Only three of the cases of spondylarthritis showed eventual abscess formation. Alexander considers that a non-infective cause should be sought, because in the large majority of cases no evidence of an infection appears. He suggests that partial dislocation of the epiphysis occurs during the vulnerable phase before the development of protective metaphysal changes, which start about the age of 7 or 8 years, and that this dislocation, and not an infectious process, is the cause. The common site—the third to fifth lumbar vertebrae—is, he states, the site of maximum stress on forward flexion and of maximal mobility on lateral flexion. The condition is rare above the tenth dorsal vertebra, a level above which the range of lateral flexion is much less. The hypothesis is relevant to treatment, because though rest would seem to be reasonable the use of antibiotics is more debatable in the absence of proof of an infective process.

R. F. Smith and T. K. F. Taylor reviewed 20 cases of lesions of the intervertebral discs in children which were considered to be inflammatory in origin. Several radiographs showed a consistent pattern of vertebral disease with a partial restoration of the disc's normal thickness. Persistent cavitation in vertebral was seen and varying degrees of vertebral overgrowth. The average age of their patients was four years, and all but two were under six. Their presenting symptoms were refusal to walk and pains in the back, hips, or thighs. The lesions were at one disc level in 18 cases and two disc levels in two. The discs of the first, fourth, and fifth lumbar vertebrae were the most commonly affected.

The authors found little to indicate that antibiotics helped greatly, though application of a plaster spica in their opinion did so.

The satisfactory outcome, mild nature of the disorder, and inadequate proof of infection make a non-infective aetiology seem most likely in these cases. Here the matter rests until more pathological and bacteriological evidence is forthcoming. In a benign disorder of this nature such evidence is not easy to find.

Antiserum Against Smallpox

Smallpox antiserum or gammaglobulin has been used for the treatment and prophylaxis of smallpox and of the complications of vaccination. Its value in the treatment of smallpox is debatable, though E. A. Boulter and colleagues showed in a rabbit model that serum therapy could be effective after overt disease had developed and that it had a beneficial effect even when given on the third day of pyrexia. There are encouraging reports of the successful use of gammaglobulin in the prophylaxis or amelioration of smallpox in contacts.

C. H. Kempe has reviewed the use of gammaglobulin in the complications of vaccination. In 62 cases of generalized vaccinia the response was generally prompt and no further lesions appeared, although 4 patients required a second administration of gammaglobulin because of the recrudescence of lesions; in 132 cases of eczema vaccinatum the mortality was reduced to 7%,from the usual level of 30-40%, in 23 cases of the uniformly fatal vaccinia necrosum only 30% of treated patients died. Gammaglobulin had no effect in 12 cases of vaccinia encephalitis. In a series of 239 cases with complications of vaccination S. Sussman and M. Grossman reported similar results. There is thus no doubt about the value of smallpox gammaglobulin, at least in the treatment and prevention of many of the complications of vaccination.

These complications can of course be reduced by careful attention to the contraindications to vaccination, by special precautions when vaccination has to be done on individuals with contraindications, by careful selection of the virus used for producing the vaccine, and by the use of gammaglobulin at the time of vaccination. Now that thiosemicarbazones are available, their use needs to be studied whether they are given alone or in combination with gammaglobulin in the various roles for which the latter has been used. Methylisatin β-thiosemicarbazone appears to be of value in the prophylaxis of smallpox in contacts, in the treatment of eczema vaccinatum and vaccinia gangrenosa, and in the vaccination of children with contraindications.

E. A. Boulter showed clearly the great importance of

1. Patel, T. B., and Naidu, B. P. B., Indian Medical Gazette, 1940, 75, 730.