Medical Memoranda

A Case of Rheumatoid Arthritis with Ankylosis of the Crico-Arytenoid Joints

Rheumatoid arthritis has been described as it affects every diarthrodial joint in the body. It was only two years ago, however, that the first descriptions of its effect on the crico-arytenoid joints as an integral part of a generalized polyarthritis were published (Baker and Bywaters, 1957; Copeman, 1957; Pearson, 1957).

These joints, although small, are highly mobile and are used not only in phonation but also in normal full respiration; their implication may therefore result in hoarseness, stridor, aphonia, or a feeling of tension in the throat which is often increased by swallowing, speaking, or coughing, and by local tenderness on lateral pressure over the larynx. Such symptomatology, if it fluctuates, is generally wrongly ascribed to intercurrent colds or laryngitis.

If ankylosis of the crico-arytenoid joints ultimately occurs these symptoms become permanent, but the condition at this stage is most often diagnosed as being due to paralysis of the recurrent laryngeal nerves (Darke, Wolman, and Young, 1958).

As post-mortem examination in such cases rarely proves possible, the following report of a case in which complete ankylosis of these joints had occurred may be of interest.

CASE REPORT

A married woman developed an acute form of rheumatoid arthritis at the age of 38. Her health previously had been good. The joints chiefly affected at the outset were the wrists, knees, and ankles. During a prolonged course of intramuscular injections of gold salts the disease subsided in activity and remained in a state of partial remission until she developed a severe attack of influenza in 1943, which appeared to reactivate it. After this it progressed steadily, involving a number of further joints. She was seen by one of us (A.C.E.) in 1945, by which time the arthritic lesions had become of the "mutilans" type of grade 3 severity, and the E.S.R. was raised to 60 mm. Further treatment was started with gold injections, rest, splintage to knees and wrists, and mild physiotherapy. After this both her general and arthritic conditions improved to grade 2, and the E.S.R. fell to 20 mm., but the disease remained active.

In 1948 she was seen again, as her arthritis had relapsed severely and she had developed acute laryngeal stridor. She complained of great pain in all the affected joints, and the E.S.R. was 50 mm.

In 1951 the laryngeal stridor and respiratory embarrassment had become so severe that she was examined by Sir Victor Negus, who reported that the vocal cords were in permanent adduction, although he did not confirm that the crico-arytenoid joints were fixed. He performed a permanent tracheotomy, which gave her relief.

Her condition remained grade 3-4 and the activity of the disease appeared to die down again until 1957, when, as the pain was less and the E.S.R. had fallen to 30 mm., she was admitted to hospital for rehabilitation. She improved considerably under this regime and with prednisone, 5 mg. night and morning, and was grade 3 on discharge, being able to dress herself partially and to move about her house on crutches. She maintained this status until her death from bronchopneumonia in February, 1958.

At post-mortem examination of her larynx the crico-arytenoid joints appeared to be fused and immovable. The

histological appearances were those of fibrous ankylosis. Serial sections through the crico-arytenoid joints showed that the joint space had been obliterated and its site occupied by collagenous fibrous tissue with varying numbers of chronic inflammatory cells (Fig. 1). There was a marked infiltration of the adjacent muscle with small round cells, and occasional small aggregations of these were seen; some

FIG. 1.—Joint completely obliterated and site replaced by fibro-fatty tissue, with small collections of leucocytes.

FIG. 2.—Perivascular collections of lymphocytes in the capsular tissue.

muscle fibres were degenerating and some were replaced by fibrous tissue; and similar but less marked changes were seen in the nerves. There was a well-marked subepithelial infiltration with small round cells, mononuclear cells, and occasional plasma cells, and small aggregations of these cells were seen in places.

We can find no previous illustrations in the literature of complete rheumatoid ankylosis of the crico-arytenoid joints.

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