LARYNGEAL STRIDOR IN RHEUMATOID ARTHRITIS DUE TO CRICO-ARYTENOID JOINT INVOLVEMENT

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The following brief notes record an unusual but important manifestation of rheumatoid arthritis, with severe attacks of suffocation.

Case Report

A housewife aged 42, with classical rheumatoid arthritis for four years, showing symmetrical polyarthritis (including finger involvement), bone erosions, subcutaneous and cutaneous nodules, and a positive Rose-Waaler test (1 : 128), was being treated with salicylates.

On September 1, 1956, she was brought to hospital as an emergency by her general practitioner; she was in marked distress and had great difficulty in getting her breath. "Omnopon" 1/6 gr. (11 mg.) had been given at home. After an hour her breathing was comfortable. For two months before this she had suffered discomfort in the region of her larynx and pain on swallowing, and had lost 10 kg. in weight. She had had no difficulty in breathing before this attack.

By September 7 she had no pain on swallowing and was breathing comfortably. Though still febrile (temperature 100–101° F.—37.8–38.3° C.), she felt much better. Examination with a laryngeal mirror showed localized redness on the posterior aspect of the left arytenoid and oedema of the left aryepiglottic fold. The larynx appeared otherwise normal, and the vocal cords were white and moved equally.

On September 15 (one week later) exertional dyspnoea was present; the oedema was unchanged, but there was some loss of abduction of the left cord. The oedema and redness cleared up during the next 10 days, but the left cord became fixed in a position of adduction and the right cord showed progressive loss of abduction; slight exertion produced inspiratory stridor.

X-ray examination revealed that swallowing was normal and showed no evidence of neoplasm in the chest or neck. Bronchoscopy and oesophagoscopy under a general anaesthetic on September 28 showed no abnormality and the patient made an uneventful recovery from the anaesthetic. The neurologist, Dr. C. H. Edwards, found no evidence of any central or peripheral nerve lesion affecting the larynx. About this time she had three minor attacks and one severe attack of dyspnoea with stridor. A tracheotomy set was kept ready in the ward.

On transfer to the Special Unit for Juvenile Rheumatism on October 19 she appeared thin, anxious, and frightened: some tenderness was noted externally at the mid-point of the right sternomastoid, and her voice was hoarse and her cough "blowing." Exertion of mild degree brought on a severe and frightening attack of dyspnoea and laryngeal stridor, relieved by oxygen (given by B.L.B. mask) in about seven minutes. She was started on delta cortisone at a dosage of 50 mg. a day with an alkaline mixture over the next two weeks, gradually reduced to 15 mg. a day by the seventh week. A dramatic improvement occurred

in her general well-being and in the local condition. Her functional capacity improved to normal and joint movement became painless.

On November 19 indirect laryngoscopy showed marked improvement. Her right arytenoid was mobile, with abduction of her vocal cord up to 60–70% of normal. Her left arytenoid was almost fixed; there was some adduction from the cadaveric position, but no abduction. Her cords approximated well and her voice was strong.

On February 6, 1957, indirect laryngoscopy showed the left arytenoid to be quite immobile and fixed in a slightly anterior plane to the right one. The right arytenoid moved freely but lacked full abduction, the space between her cords on full inspiration being 5–6 mm. She was then able to move freely on her household duties and managed the stairs without dyspnoea on 15 mg. of prednisone a day.

In retrospect, the laryngeal picture resembled that of bilateral abductor paralysis. At no stage was any redness or oedema seen around the right arytenoid and at no stage was oedema observed to cause any direct obstruction to respiration—her difficulty in breathing was essentially due to loss of abduction.

Discussion

The differential diagnosis is fully discussed by Montgomery *et al.* (1955). Although the patient had had a partial thyroidectomy nine years previously, there was evidence neither of neoplastic nor of ischaemic nerve damage, despite evidence elsewhere in this patient of vascular lesions associated with rheumatoid arthritis (nail-fold thrombosis and nail-edge lesions). The presence of a few genuine L.E. cells from time to time, of cold agglutinins, of a leucopenia over 10 weeks of observation (2,150 per c.mm. with 26% polymorphs at the lowest), and of one positive Coombs test out of six, led us to think of systemic lupus erythematosus, in which peripheral nerve palsy sometimes occurs on a vascular basis (Heptinstall and Sowry, 1952), but this appeared to be primarily a local lesion due to crico-arytenoid joint inflammation.

The left crico-arytenoid joint is now ankylosed, but the acute lesion on the right side responded to delta cortisone like the rest of her joints. It is interesting to note that two of the cases recorded by Montgomery *et al.* got worse and developed stridor on cortisone. The lesser salt-retaining properties of the delta analogues compared with cortisone make them potentially more valuable in this situation, and by this means tracheotomy, which would have been necessary otherwise, was avoided.

We are grateful to Dr. Philip Willcox for referring this patient and for the use of his notes.

REFERENCES

- Heptinstall, R. H., and Sowry, G. S. C. (1952). *British Medical Journal*, **1**, 525.
Montgomery, W. W., Perone, P. M., and Schall, L. A. (1955). *Ann. Otol. (St. Louis)*, **64**, 1025.

The second annual meeting of the British Section of the Louis Rapkine Association was held at the Ciba Foundation on Monday, May 6, under the chairmanship of Professor A. V. HILL, F.R.S. The eminent French archaeologist, the Abbé BREUIL, gave a talk on the cave paintings of Rouffignac in the Dordogne, illustrated by slides of the magnificent paintings and rock carvings of mammoths, horses, ibexes, and rhinoceroses found in the caves. The association was founded last year in memory of the French biochemist, Louis Rapkine. Membership is open to British and French doctors and research workers in the biological sciences who have been awarded scholarships or bursaries to enable them to visit the other country and study recent developments in their special subject. Information about the association can be obtained from Dr. G. E. WOLSTENHOLME, Ciba Foundation, 41, Portland Place, London, W.1, or Miss A. M. VIDAL-HALL, Scientific Office, French Embassy, 22, Wilton Crescent, London, S.W.1.