Intra-articular steroid injection in acute rheumatoid arthritis of the larynx

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The cricoarytenoid joint is an arthrodial one with a fibrous capsule and a synovial lining, and its involvement in rheumatoid disease causes destruction of the joint lining with irregularity of the articular surfaces and widening of the joint space which becomes filled with fat and fibrous tissue, thus leading to its complete distortion and dysfunction. If this stage could be averted, one should be able to save the vocal cords from fixation and immobility which may lead to acute stridor.

This report represents a case of acute cricoarytenoid arthritis secondary to rheumatoid disease in which the symptoms, signs, investigations and management are mentioned, with special interest into a new line of treatment.

Report of Case

A 63-year-old white female, Mrs. A.T., who had been crippled with rheumatoid arthritis for over fifteen years was admitted to the hospital as an emergency with severe inspiratory insufficiency. When she was seen for laryngological assessment she was distressed and cyanosed, with hyperactive accessory inspiratory muscles; indirect laryngoscopy showed complete immobilization of the vocal cords in the paramedian position and both arytenoid regions were red, swollen and oedematous. Due to the severity of her airway obstruction, a tracheostomy operation was done, under general anaesthesia with endotracheal intubation, shortly after her admission. Direct examination of the larynx at that time confirmed the diagnosis of acute arthritis of the cricoarytenoid joints with fixation of both vocal cords. The Pulmonary Function tests showed mild to moderate obstructive airway disease and roentgenographic studies of her joints and chest confirmed the diagnosis of a systemic rheumatoid disease.

Progress and treatment

Under systemic steroid therapy in the form of Prednisolone 30 mg./day the patient's general condition improved very much but her laryngeal inlet remained narrow due to the persistent fixation of her vocal cords. Three weeks later the patient was taken to the theatre again and an intra-articular injection of both cricoarytenoid joints was performed under general anaesthesia using a long small-calibre lumbar puncture needle. Each joint was injected with 1 ml. of Depomedrone (a long acting steroid)—under microscopic magnification. Ten days later the tracheostomy tube was gradually corked with no inspiratory difficulty and it was three days later when the tube was totally blocked—but left in situ—for a twenty-four-hour period without any problem. Indirect laryngoscopy at this stage showed marked improvement of vocal cord abduction and less swelling of the arytenoid regions. The patient's condition remained so during her follow-up in the Out-Patients' Department after she had her tube out.
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Discussion

Arthritis involving the larynx has been reported since the late 1800s. Initially it was believed that it was due to trauma or infection, but it was Montgomery et al. (1955) who reported four cases of arthritis of the cricoarytenoid joint due to rheumatoid degeneration. Saunders (1956), Copeman (1957), and Baker and Bayswater (1957) recorded other cases of laryngeal stridor, all caused by arthritic fixation of the cricoarytenoid joints. In 1958, Darke, Wolman and Young claimed that the fixation of the joints was due to recurrent laryngeal nerve degeneration secondary to ischaemia of its vasa nervosa; while Pearson (1957) and Montgomery (1959) supported this view, post-mortem examinations of all their reported cases did show strong evidence of chronic inflammatory degeneration of the joint spaces as well as polymyositis of the abductor laryngeal muscles. It is interesting to notice that although the severity and frequency of laryngeal involvement were well recognized, and reported by Lofgren and Montgomery (1962) to occur in 26 out of 100 patients with rheumatoid arthritis, yet not a single case was treated by intra-articular steroid injection of the larynx. While the main lines of treatment of the cases which present with severe stridor lay between systemic steroid therapy, permanent tracheostomy, and/or arytenoidectomy, the author believes that the local use of steroids is a very simple, safe and effective line of treatment.

Summary

A case of stridor due to rheumatoid arthritis of the cricoarytenoid joints is presented, with special emphasis on a new line of treatment by local intra-articular steroid injection.

Acknowledgement

I thank Mr. A. Bracewell, Consultant E.N.T. Surgeon, Poole General Hospital, for allowing me to report this case.

REFERENCES


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