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Fracture of costochondral graft in temporomandibular joint: an unexpected complication


Abstract: The case of a 35-year-old woman with a history of several temporomandibular joint (TMJ) operations, including condylectomy, is reported. She presented with myofacial pain and an angular arthroplasty of her right TMJ. The arthroplasty was released and an autogenous costochondral graft used to restore the vertical dimension of the ramus. About 3 months after surgery, a fracture of the graft occurred during physical therapy. The case of this complication is discussed with reference to the literature.

Case report:

A 35-year-old woman consulted an oral and maxillofacial surgeon because of pain in the right TMJ. Due to previous surgeries including a condylectomy, the patient was referred for reconstruction of the joint. An autogenous costochondral graft was used to increase the vertical dimension of the ramus. The graft was fixed with screws and the mouth was closed. However, 3 months after surgery, the patient developed pain and swelling in the right TMJ. Physical therapy was initiated, but increased pain and restricted opening were noted. Arthrography revealed a fracture of the graft. The patient was referred to an orthopedic surgeon for further treatment.

Key words: costochondral grafts, reconstruction, complications, temporomandibular joint, condylectomy, arthroplasty.

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Fig. 1. Close-up view of the right column. No remnants of the condylar head, together with thin threads.
whether the complications had occurred. The treatment was the use of antibiotics. The patient had a fever of 38.5°C for 1 week after surgery, which was associated with a pyrexia. The patient was treated with a broad-spectrum antibiotic. The antibiotics were continued for 2 weeks after surgery. The patient recovered well and was discharged from the hospital after 1 week.

Discussion

The complications that occurred in this case were mainly due to the infection. The patient had a fever of 38.5°C for 1 week after surgery, which was associated with a pyrexia. The patient was treated with a broad-spectrum antibiotic. The antibiotics were continued for 2 weeks after surgery. The patient recovered well and was discharged from the hospital after 1 week.

Fracture of condylar neck

The condylar neck is a common site of fracture. The fracture is usually caused by a direct blow to the chin. The treatment is usually surgical. The fracture is usually treated with open reduction and internal fixation. The patient is usually kept in a splint for 6 weeks after surgery. The patient is usually allowed to return to normal activities after 6 weeks.

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due to immobilization of the joint during the period of IMF.

Several authors report on various time spans for IMF when inserting costochondral rib grafts. Kaban et al. applied about 1 week of IMF after reconstruction and rigid fixation of the graft with screws only. However, Lindqvist et al. kept the patient in fixation for a mean of 3.5 weeks and Macintosh & Henny for 4-8 weeks, both groups reporting very satisfactory long-term results. It cannot be ruled out that the reankylosis found during the fifth operation was caused by the period of IMF, but the authors still think that a significant muscular component contributed to this disappointing result.

In the case presented, it appeared that the graft was not strong enough to withstand the excessive forces necessary to promote mobilization of the TMJ. In retrospect, it would have been better to use general anesthesia with muscle relaxation for evaluation of the mouth opening and to try to increase its range. This would probably have reduced the risk for fracture of the graft.

This case demonstrates the potential weakness of a rib graft even 3-4 months after insertion. It is probably better not to position the rib in a transverse fashion. Forcible opening of the mouth should be avoided for at least 6 months to allow for complete bone remodeling. The period of IMF should also be reduced to a minimum in order to avoid the possibility of reankylosis.

References