

A Study on Treatment of Recurrent Temporomandibular Joint Dislocation

A Andrew¹, B Saravanan², G Suresh Kumar¹, M Harihara Sabari³, Heber Anandan⁴

¹Professor, Department of Dental Surgery, Tirunelveli Medical College Hospital, Tirunelveli, Tamil Nadu, India, ²Professor, Department of Oral and Maxillofacial Surgery, Tamil Nadu Government Dental College and Hospital, Chennai, Tamil Nadu, India, ³Assistant Professor, Department of Dental Surgery, Tirunelveli Medical College Hospital, Tirunelveli, Tamil Nadu, India, ⁴Senior Clinical Scientist, Department of Clinical Research, Dr. Agarwal's Healthcare Limited, Chennai, Tamil Nadu, India

Abstract

Introduction: Temporomandibular joint (TMJ) dislocation is an uncommon but debilitating condition of the facial skeleton. The condition may be acute or chronic.

Aim: To study the surgical treatment of recurrent TMJ dislocation.

Materials and Methods: A total of 14 patients with complaints of recurrent dislocation of the TMJ were included in the study. Glenotemporal osteotomy and interposition of mastoid bone grafts (Norman technique) are done as a definite treatment of recurrent dislocation of the jaw.

Results: Of the 14 patients, 4 female and 10 male, age range between 19 and 29 years with an average of 24 years. The duration of the post-operative follow-up period was 12 months. The mean maximal mouth opening was estimated at 38 mm.

Conclusion: Chronic protracted and chronic recurrent dislocations are among the most difficult to manage. Surgical intervention is required to treat these properly.

Key words: Bone graft, Recurrent dislocation, Temporomandibular joint

INTRODUCTION

Temporomandibular joint (TMJ) is a unique, ginglymoid, diarthrodial synovial joint which is essential for the normal functions. Two features make the joint unique. This is the only joint in the body whose movements are limited not only by the muscular activity but also by the occlusion of teeth through their connection of the articulating bones. Second, left and right joints are connected by a single bone the mandible.¹ Although capable of slight bending, it is essentially a solid unit, which precludes one joint from moving independently of the other. The classification of the disorders of TMJ is

by no means comprehensive, but for practical purposes, the problems that afflict the TMJ have been divided into common and rare disorders. One of the most distressing disorders of the TMJ is chronic recurrent dislocation of the joint with a multifactorial etiology.^{2,3} Dislocation is a displacement of the condylar head completely out of the glenoid fossa, and anterosuperior to the articular eminence which usually cannot be reduced by the patient (Sir Astley Cooper, 1832).⁴ Dislocation that take place repeatedly is referred to as recurrent dislocation. A wide variety of treatment modalities has been discussed in literature broadly classified as conservative and surgical management.⁵ Although it is possible to start treating this pathology conservatively, these forms of treatment are almost always unsuccessful. Over the years a wide variety of operations have been performed that included operating on muscles, the articular capsule the articular meniscus and the condyle. At present, the most widely accepted techniques are those applied to the articular eminence. The eminence is reduced thus favoring free movement of the condyle or an eminential

Access this article online



www.ijss-sn.com

Month of Submission : 07-2017
Month of Peer Review : 08-2017
Month of Acceptance : 09-2017
Month of Publishing : 09-2017

Corresponding Author: G Suresh Kumar, Department of Dental Surgery, Tirunelveli Medical College Hospital, Tirunelveli, Tamil Nadu, India. Phone: +91-9444871015. E-mail: omfs007@yahoo.in

augmentation interposing graft material to prevent excess movement of the condyle. Glenotemporal osteotomy with interpositional bone graft was first described by De Norman 1984.⁶ It is an eminence augmentation procedure and is a definitive treatment for chronic recurrent dislocation of the jaw. It has been highly satisfactory of commendable simplicity, productive of excellent results and minimal morbidity.

Aim

The aim of the study was to study the surgical treatment of recurrent TMJ dislocation.

MATERIALS AND METHODS

A total of 14 patients with complaints of recurrent dislocation of the TMJ were included in the study. All of them had suffered multiple episodes of dislocation of the jaw; that needed reduction on at least five occasions. The mean duration of the recurrent dislocation was 1 year. In all patients, bilateral dislocations were reported. All patients were subjected to careful and thorough examination to establish the exact diagnosis. All the 14 patients were diagnosed as having bilateral, chronic recurrent dislocation of the TMJ clinically and radiologically. After establishing the diagnosis, the patients were placed on conservative therapy such as intake of soft diet, restricting the opening of the mouth and immobilization of the mandible by maxillomandibular fixation for a period of 3 weeks. None of the patients responded to these treatments, and they developed new episodes of recurrent dislocation. Hence, glenotemporal osteotomy and interposition of mastoid bone grafts (Norman technique) are done as a definite treatment of recurrent dislocation of the jaw.

RESULTS

Of the 14 patients, 4 female and 10 male, age range between 19 and 29 years with an average of 24 years. The duration of the post-operative follow-up period was 12 months. The mean maximal mouth opening was estimated at 38 mm. A number of the patients experienced pain, which subsided with analgesics. In 1 case, the miniplate was fractured, and a second operation was performed. In 2 cases, abscesses existed. In 1 case, although there were two surgical operations, the complaints did not subside, and steroids were injected into the joint. Permanent facial nerve paralysis was not observed in any case. Performing substantial post-operative physiotherapy prevented osteoarthritis of the TMJ dislocation. A permanent joint sound was not observed at 1 year of follow-up.

DISCUSSION

Recurrent TMJ dislocation is a common disease of TMJ. The primary treatment is the removal of the etiological factors of dislocation such as occlusion and psychological problems. Recurrent TMJ dislocations cause the surrounding tissue and bone structure to degenerate. In such a situation, conservative treatment is not successful. For the treatment of recurrent TMJ dislocation, many methods are attempted for the articular eminence, condyle or soft tissue.^{3,7}

Many surgical procedures have been advocated for treatment of hypermobility of the TMJ. Conservative approaches include limiting the excursion of the condyle, including physical therapy; splints, intra-articular sclerosing injections cause joint fibrosis and use of Botulinum type-A toxin. These treatments are rarely successful, and therefore, surgery is often indicated.⁸

According to the literature, capsulorrhaphy, meniscectomy, eminectomy, capsular ligament placcation, and shortening are useful methods for the treatment of TMJ dislocation. However, after a period of time, the dislocation can relapse. Condylectomies, mandibular shortening and ankylosis, and the downfracture of the zygomatic arch have complications, such as facial asymmetry and a limited degree of jaw movement.

After 2 years, Raja Kummoona achieved 100% success in all 7 cases of hypermobility with an average post-operative mouth opening of 32.5 mm. Medra *et al.* observed one recurrence out of 60 cases operated. The average post-operative mouth opening after 1 year was 42 mm.^{8,9}

The results of our study are quite comparable. This technique is versatile but long-term follow-up on a larger group of patients is, of course, necessary to be able to draw definitive conclusions.

CONCLUSION

When conservative treatment methods are ineffective for a recurrent TMJ dislocation, surgery is the only option. The management of TMJ dislocation is customized as per the underlying cause. Manual reduction is sufficient in case of acute dislocation. Chronic protracted and chronic recurrent dislocations are among the most difficult to manage. Surgical intervention is required to treat these properly.

REFERENCES

1. Greenberg SA, Jacobs JS, Bessette RW. Temporomandibular joint dysfunction: Evaluation and treatment. *Clin Plast Surg* 1989;16:707-24.

Andrew, *et al.*: Treatment of Recurrent Temporomandibular Joint Dislocation

2. Zide BM. The temporomandibular joint. In: McCarthy JG, editor. Plastic Surgery. Philadelphia, PA: W B Saunders Company; 1991. p. 247-70.
3. David LR, Marks MW, Argenta LC. Temporalis fascialis sling-a surgical technique for the treatment of recurrent dislocation of the temporomandibular joint. Eur J Plast Surg 1998;21:411-4.
4. Tesfaya Y, Skorzevska A, Lal S. Hazard of yawning. Can Med Assoc J 1991;145:1560.
5. Georgiade N. The surgical correction of chronic luxation of the mandibular condyle. Plast Reconstr Surg 1965;36:339-42.
6. De Norman JE. Recurrent dislocation of the temporomandibular joint. Glenotemporal Osteotomy and a Modified Dowel Graft. European Association for Maxillofacial Surgery, 7th Congress, Abstracts 97; 1984.
7. Undt G, Kermer C, Rasse M. Treatment of recurrent mandibular dislocation, Part II: Eminectomy. Int J Oral Maxillofac Surg 1997;26:98-102.
8. Medra AM, Mahrous AM. Glenotemporal osteotomy and bone grafting in the management of chronic recurrent dislocation and hypermobility of the temporomandibular joint. Br J Oral Maxillofac Surg 2008;46:119-22.
9. Kummoona R. Surgical reconstruction of the temporomandibular joint for chronic subluxation and dislocation. Int J Oral Maxillofac Surg 2001;30:344-8.

How to cite this article: Andrew A, Saravanan B, Kumar GS, Sabari MH, Anandan H. A Study on Treatment of Recurrent Temporomandibular Joint Dislocation. Int J Sci Stud 2017;5(6):209-211.

Source of Support: Nil, **Conflict of Interest:** None declared.