A new modified endaural approach for access to the temporomandibular joint

C. A. Ruiz,* J. S. Guerrero†

*Oral and Maxillofacial Surgeon; Chief, Division of Oral and Maxillofacial Surgery; †Formerly Resident, Pontificia Universidad Javeriana, Hospital Universitario Clínica San Rafael, Bogotá, Colombia

SUMMARY. We present a new modification of an endaural incision for access to the temporomandibular joint. This gives excellent posterior, anterior, lateral and inferior exposure, avoids important anatomical structures and provides an almost invisible scar. © 2001 The British Association of Oral and Maxillofacial Surgeons

INTRODUCTION

Several approaches to the temporomandibular joint (TMJ) have been proposed over the years¹ and perhaps the standard and most commonly used incision is the preauricular. Several endaural approaches have also been recommended, with the dual aims of providing adequate access and achieving a cosmetically acceptable scar.²⁻⁴

We present a new modification of the modified endaural incision previously described by one of us.⁵ This approach is based on the achievement an aesthetically acceptable scar.⁶⁻⁷ It gives excellent posterior, anterior, lateral, and inferior exposure; avoids the related anatomic structures; and offers acceptable cosmetic results by hiding and camouflaging the scar (Fig. 1).

We have used the modified endaural incision since June 1997 in patients referred to our department with internal derangements and other conditions of the TMJ that require surgical treatment.

PATIENTS AND METHODS

We present a consecutive series of 50 patients (age range 14–57 years) who were operated on for disorders of the TMJ at the Hospital Universitario Clínica San Rafael, in Bogotá, Colombia, between June 1997 and February 2000. Thirty-eight were women and 12 were men. The joints were operated on for internal derangement, mandibular dislocation, condylar hyperplasia with simultaneous orthognathic surgery, or reoperation after placement of TMJ prostheses.

TECHNIQUE

Neither the hair of the temporal area nor the preauricular region are shaved. After the patient has been prepared and draped, a small gauze pledge is placed in the external auditory canal. This isolates the canal from the operative site and prevents the accumulation of blood in it. The proposed endaural incision is marked with ink, while the preauricular skin is retracted anteriorly (Fig. 1). It begins at the inner (posterior–superior) border of the

Fig. 1 Site of the incision.
rim of the helix in relation to the scaphoid fossa, then is taken inferiorly until it reaches the superior slope of the crus. A $90^\circ$ downward line is drawn across it. A second $90^\circ$ line is made in an anterior direction following the inferior slope of the crus toward the anterior incisura. Before reaching it, a final downward line is made along and beneath the crest of the tragus, to end at the incisura terminalis inferiorly (Fig. 1). Two per cent lidocaine (Lignospan) local anaesthetic with vasoconstrictor (1 : 100 000) is then infiltrated into the preauricular tissues. The incision is made with the scalpel, and the skin and subcutaneous connective tissue are dissected with Metzembauers scissors, while the surgeon raises the flap with a small double skin hook. Any bleeding superficial vessels are cauterized before deeper dissection proceeds. The dissection then continues and the first assistant develops a plane through the superficial temporal fascia by using two Senn–Miller retractors. The superficial temporal vessels are occasionally encountered at this point; they are retracted aside and it is or sometimes necessary to ligate them. The dissection progresses inferiorly through the temporalis fascia until the capsule of the TMJ is reached; this is entered by a T-shaped incision (Fig. 2).

On completion of the operation, the joint capsule and deep tissues are closed with resorbable sutures to restore the anatomy and eliminate dead space. The skin incision is closed with interrupted 6/0 Polypropylene (Prolene)® sutures. Gauze pledget in the auditory canal is changed, and no stent or pressure dressing is applied. The sutures are removed after 7 days.

**RESULTS**

The surgical exposure was excellent posteriorly, anteriorly, laterally, and inferiorly. Because the dissection begins through planes posteriorly, it was easy to identify the superficial temporal vessels and retract or ligate them. The dissection allowed protection of the temporal branch of the facial nerve, which was retracted anteriorly. Neurapraxia of this nerve was seen in three patients. The incision was used in one patient who had had previous operation on the TMJ. No complications have arisen with the use of this incision and patients have been pleased with the cosmetic result (Fig. 3).

**DISCUSSION**

This incision allows excellent exposure of the posterior, anterior, and lateral aspects of the TMJ. Inferiorly the approach provides good access both to the lower joint space and to the neck of the condyle so that it can be used for procedures such as high condylectomy, condylootomy, or low condylectomy.

A broad based flap with an excellent blood supply is obtained, and no ischaemic complications were observed.

The risk of damage to the temporal branch of the facial nerve is reduced, as the dissection is performed in an orderly process through each layer one at a time,
leaving it distant from the surgical field on a more ante-
rior and superficial plane.

We conclude that this endaural approach has resulted in adequate exposure of the TMJ, with functional and cosmetically satisfactory results.

REFERENCES


The Authors

Carlos Alberto Ruiz DDS
Oral and Maxillofacial Surgeon
Chief, Division of Oral and Maxillofacial Surgery
Hospital Universitario Clínica San Rafael
Bogotá, Colombia

Jaime Santiago Guerrero DDS
Formerly Resident, Maxillofacial Surgery
Pontificia Universidad Javeriana
Hospital Universitario Clínica San Rafael
Bogotá, Colombia

Correspondence and requests for offprints to: Jaime Santiago Guerrero, Carrera 5 N° 6 – 140 C Bocagrande, Cartagena – Colombia, South America. Tel: + 95 665 14 66; Fax: +95 662 58 69; E-mail: maxilo@hotmail.com

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