as the thyroid gland and hyoid bone, to determine whether any associated anomalies exist.[3,16] Alternatively, CT or magnetic resonance imaging may be performed for a more thorough assessment of the soft tissue relationships; in our case, a CT scan of the neck confirmed a superficial subcutaneous cord, without deeper tissue involvement. To determine the source of airway obstruction, preoperative flexible laryngoscopy should be performed.

Surgical treatment of CMCC is required to alleviate or prevent anterior neck contracture, respiratory distress, micrognathia, and infection and for aesthetic reasons.[4,5,13] Treatment involves the complete excision of the lesion and any involved tissues, followed by closure, which is most commonly performed with a Z-plasty or multiple Z-plasties.[1,21] Because of the variable presentation of CMCC, an individualized surgical approach is recommended. This was highlighted in our case because a lengthening procedure of a shortened sternohyoid muscle was required—an intraoperative finding that was not determined by preoperative imaging or physical examination may have resulted in torticollis if left untreated. Z-plasty is regarded as the best option for closure of the wound because it results in lengthening of the skin of the anterior neck and a nonvertical scar and it is less likely to result in hypertrophic scarring or wound contracture that has been reported when a simple linear closure is used.[1,21] However, linear closure has been used successfully[10] and has been suggested as a possible option for smaller lesions where an improved cosmetic outcome is sought.[22]

Overall, treatment outcomes are largely influenced by the size of the lesion, the amount of time passed before surgical treatment is sought, and the complete excision of the lesion.[1,6] Early treatment is recommended because complications may result if the lesion is left untreated,[1,21] and similarly, contracture may recur if the cord is incompletely excised.[6] Our patient has done well without wound complications or deformity, and he is free from recurrence 12 months after surgery.

CONCLUSIONS

Congenital midline cervical cleft is a rare defect with an unresolved embryopathogenesis but likely involves abnormal fusion of the first or second branchial arches. It classically presents as an erythematous plaque with a cranial nipple-like projection, a small superficial caudal sinus, and an underlying fibrous cord. Early surgical treatment is recommended and requires complete surgical excision of the lesion with single or multiple Z-plasty reconstruction.

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Paramedian Mandibular Cleft: Revisiting the Tessier Classification

Neil Tanna, MD, MBA, Derrick C. Wan, MD, Adam D. Perry, MD, Henry K. Kawamoto, DDS, MD, James P. Bradley, MD

Abstract: Mandibular clefts are extremely rare, with less than 100 cases reported in the literature. Almost universally, these isolated cases of lower facial clefting have been noted to occur through the midline of the lip and/or mandible. The defect can vary, ranging from mild notching of the lower lip or mandibular alveolus to complete mandibular cleavage. The authors present a rare case of a paramedian mandibular cleft in a patient who also had Goldenhar syndrome and Tessier number 2/12 cleft. With its presentation, the authors revisit the Tessier classification of craniofacial clefts and the embryogenesis of lower facial clefts.

Key Words: Paramedian mandibular cleft, Tessier cleft, Goldenhar syndrome

From the Division of Plastic & Reconstructive Surgery, David Geffen School of Medicine, University of California, Los Angeles, California.
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Address correspondence and reprint requests to James P. Bradley, MD, 200 UCLA Medical Plaza, Suite 465, Box 956960, Los Angeles, CA 90095; E-mail: bradley.research@gmail.com
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FIGURE 1. An 8-year-old with Goldenhar (oculoauriculovertebral) syndrome presented with a left-sided Tessier number 2/12 cleft, left preauricular pits, right microtia, left epibulbar dermoid, bifid nose, and micrognathia.

Clefts of the lower lip and mandible were first described in 1819 by Couronné.[1] Tessier[2] designated the median mandibular cleft as number 30 in his classification.[3] Although Tessier later provided a classification scheme numbering facial clefts from 0 to 14, he also designated the median mandibular cleft as number 30.[3]

Mandibular clefts are extremely rare, with less than 100 cases reported in the literature.[4] Almost universally, these isolated cases of lower facial clefting have been noted to occur through the midline of the lip and/or mandible.[5–14] The defect can vary, ranging from mild notching of the lower lip or mandibular alveolus to complete mandibular cleavage.[4,10]

The authors present a rare case of a paramedian mandibular cleft in a patient who also had Goldenhar syndrome and Tessier number 2/12 cleft. With its presentation, the authors revisit the Tessier classification of craniofacial clefts and the embryogenesis of lower facial clefts.

CLINICAL REPORT

An 8-year-old previously untreated girl with Goldenhar (oculoauriculovertebral) syndrome presented to our multidisciplinary craniofacial clinic for evaluation and management of rare craniofacial clefts. The patient was noted to have a severe craniofacial deformity, including facial clefting, microtia, micrognathia, and malocclusion. The patient was the fourth child to healthy parents with no family history of consanguinity or craniofacial abnormalities. The pregnancy was uneventful, and the child was vaginally delivered at full term.

On physical examination, the patient was found to have a left-sided Tessier number 2/12 cleft. The patient also had left preauricular pits and right microtia with aural atresia. Inspection of the eyes revealed a left epibulbar dermoid and obstruction of the ipsilateral nasolacrimal duct. She had a bifid nose with a broad nasal root (Fig. 1). The patient was also noted to have micrognathia, and an intraoral examination revealed severe malocclusion with left mandibular cleft (Fig. 2).

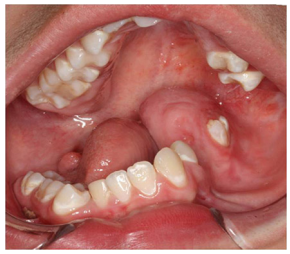

FIGURE 2. Intraoral examination reveals severe malocclusion with a left mandibular cleft.

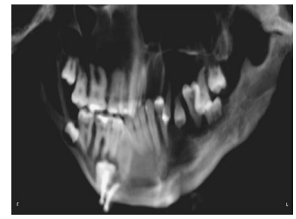

FIGURE 3. Panoramic x-ray demonstrates a left paramedian mandibular cleft.

Radiographic examination demonstrated skeletal features consistent with craniofacial microsomia (Figs. 3 and 4). The patient had a Pruzansky type III mandible on the right and a paramedian mandibular cleft on the left. Over the ensuing years, the patient underwent staged right ear and mandibular reconstruction with costocartilaginous rib grafting followed by mandibular distraction.

DISCUSSION

Lower facial clefts of the lip and/or mandible are rare congenital anomalies.[4] Clefting of the mandible involves the midline in almost all cases described.[10] These defects are consistent with Tessier's[2] description of a number 30 cleft.[3]

Paramedian clefting of the lower face is extremely rare and has been documented by only 2 others.[15,16] This report represents the third case of a paramedian mandibular cleft. This cleft is different than the number 30 observed by Tessier; paramedian lower facial clefts are a distinct and real entity.[2] Such clefts would probably share a designation between the existing numbers 14 and 30 clefts.

There is no consensus concerning the embryogenesis of lower facial clefts.[3,10] Mandibular clefts may be secondary to a fusion defect between the mandibular prominences of the first branchial arches. Alternatively, clefting may represent a failure of mesodermal migration and penetrance. In addition, growth centers within the developing mandible may be necessary for formation. Partial or complete failure of growth center differentiation may contribute to mandibular defects, rather than solely a simple failure of mandibular prominences to merge in the midline.[10] Observations of paramedian mandibular clefts, as presented in this report, strengthen the latter arguments.

Debate also surrounds the timing of reconstruction. Depending on the severity of the clefting, delayed closure of the mandibular defect until 8 to 10 years of age has been suggested.[11,12] Reconstruction, at the age of mixed dentition, offers the advantage of reduced risk of damage to the tooth buds. Proponents of earlier correction, however, cite the need to ameliorate the severe malocclusion that often accompanies these clefts. Interestingly, successful correction of bony mandibular defects has been reported as early as 20 months of age.[17]

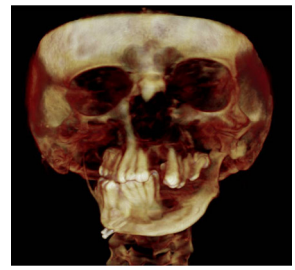

FIGURE 4. A three-dimensional reconstructed radiograph of a high-resolution computed tomography scan demonstrates a left paramedian mandibular cleft and mandibular hypoplasia.

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Retrospective Analysis of Sutureless Skin Closure in Cleft Lip Repair

Rajshekhar Halli, MDS, Ajit Joshi, MDS,† Yogesh Kini, MDS, DNB,† Viraj Kharkar, MDS,† Manjula Hebbale, MDS‡*

From the *Department of Oral and Maxillofacial Surgery, Bharati Vidyapeeth University Dental College and Hospital; †Department of Oral and Maxillofacial Surgery, Rural Dental College and Hospital; and ‡Department of Oral Medicine and Radiology, Bharati Vidyapeeth University Dental College and Hospital, Maharashtra, India.

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Address correspondence and reprint requests to Rajshekhar Halli, MDS, Department of Oral and Maxillofacial Surgery, Bharati Vidyapeeth University Dental College and Hospital, Pune – 411043, Maharashtra, India; E-mail: drrajshekharh@rediffmail.com

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Abstract: The technique of approximating tissues resulting in minimal amount of scar usually requires skillful suturing techniques by the surgeons, especially in cleft lip repair. Increased awareness and demand for aesthetic surgical correction with quality in tissue closure has led to the invention of new materials and techniques. Amcrylate (iso amyl 2-cyanoacrylate) is retrospectively evaluated as tissue glue in cleft lip repair, and the results are compared with skin closure by 6-0 Prolene.

A retrospective analysis of 60 patients with unilateral or bilateral cleft lip repair was carried out to compare the results of skin closure with Amcrylate and 6-0 Prolene. Patients were randomly divided into 2 groups, each group containing 30, and the study was designed to evaluate the quality of scars after the use of Amcrylate tissue adhesive to close the skin during cleft lip repair and its advantages over sutures (6-0 Prolene).

Both groups were analyzed for the time taken for skin closure, resultant scar, parental satisfaction, and complications, and the results were found to be statistically significant for the Amcrylate group. Amcrylate, when used as tissue glue for skin closure in cleft lip repair, definitely has an edge over conventional suturing techniques.

Key Words: Cleft lip repair, cyanoacrylate, tissue glue, esthetic closure, sutureless skin closure

The technique of approximating tissues resulting in minimal amount of scar, a dream of every surgeon, has been traditionally achieved by skillful suturing techniques, especially in cleft lip repair. Removing fine sutures after cleft lip repair in a child is difficult because it often requires some form of anesthesia that must be administered in the operation theater, thereby taking up valuable operating room time and the risks associated with anesthesia.[1]

Increased awareness and demand for aesthetic surgical correction with quality in tissue closure has led to the invention of new materials and techniques, ranging from skin staples, skin tapes, tissue glues, and so on.

It is a well-known fact that the needle and suture method is time consuming. The final appearance of the sutured wound is not always satisfactory, for example, the visibility of cross-hatching of the sutures. To overcome these disadvantages, various other methods have been investigated. As an alternative to sutures, plastic adhesives were discovered in 1949, and 10 years later, Coover et al reported their use in surgical procedures.[1–6] Recently, medical-grade

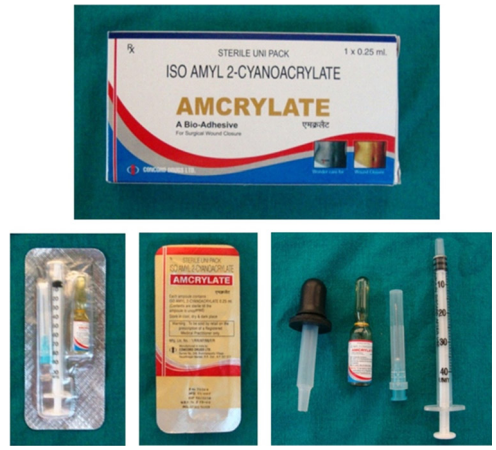

FIGURE 1. Amcrylate (iso amyl 2-cyanoacrylate).