Case Report

A Rare Case of Paramedian Cleft Palate

Khyrat Al Ameer, Sherry Andrews, Brigit Varghese Eapen
Department of Oral and Maxillofacial Surgery, Armed Forces Hospital Southern Region, Khamis Mushayt, KSA

Abstract

We present a case report of a 15-month-old baby with an isolated unilateral paramedian cleft palate. A cleft palate is usually seen in children born to their parents through consanguineous marriage. However, a paramedian cleft palate is a very rare finding and very few cases have been reported in the world and none have been published, hence our initiative to present this case report and a modified technique for closure of the same. Along with the conventional von Langenbeck technique, a modification using a rotational flap from the retromolar fossa was done to close the oral mucosal layer.

Keywords: Paramedian cleft palate, von Langenback technique, Rotational flap

Introduction

A cleft palate is a discontinuity in the secondary palate which may involve the soft palate and part of the hard palate in incomplete cases and the whole hard and soft palate in complete cases. In some cases, you will find cleft palate alone but some will be continuous with cleft lip and alveolus. The common problems associated with cleft palates are lack of negative pressure in the mouth during breastfeeding, recurrent respiratory infections due to the communication between the nasal and oral cavity, recurrent middle ear infections and also speech can be affected. Hence, surgical management of the cleft palate is very important at the appropriate chronological age to prevent the above-mentioned problems and facilitate normal function at the earliest. The cleft palate is usually seen in the midline, which can be unilateral or bilateral. In this case report, we present to you a very rare case of paramedian cleft involving mainly the soft palate.

Embryology

The palate acts as an anatomical barrier that separates the oral cavity from the nasal cavity.[1] Together with other structures of the pharynx, it contributes to the function of the velopharyngeal sphincter by assisting in speech and feeding. Without the normal function of these structures, patients with a cleft palate may develop changes such as nasal air leaks and food reflux through the nose.[2] The palatine processes of the maxilla grow towards each other and fuse in the midline, as well as with the medial nasal process on either side, anteriorly forming the palate. The area of the palate which is formed from the medial nasal process is called the primary palate or the premaxilla.

During normal development in the 6th week of intrauterine life, the palatal shelves are vertical and are separated by the tongue.[3] Gradually, these processes move upwards becoming horizontal (while the tongue descends downwards) and move towards each other to fuse in the midline forming the secondary palate. Each palatal process also fuses with the medial nasal process forming the 'V'-shaped primary palate anteriorly. When there is a failure of the fusion of these processes either partially or completely, it leads to the formation of a cleft palate.

Case Report

We present a case operated in the Armed Forces Hospital Southern Region, Khamis Mushayt, K.S.A.

This 15 month old baby boy was first brought to the Maxillofacial Outpatient Department at the age of 3 months by his parents in November 2020 with an isolated unilateral

Address for correspondence: Dr. Brigit Varghese Eapen, Department of Oral and Maxillofacial Surgery, Armed Forces Hospital Southern Region, Khamis Mushayt, KSA.
E-mail: ebrigit@hotmail.com

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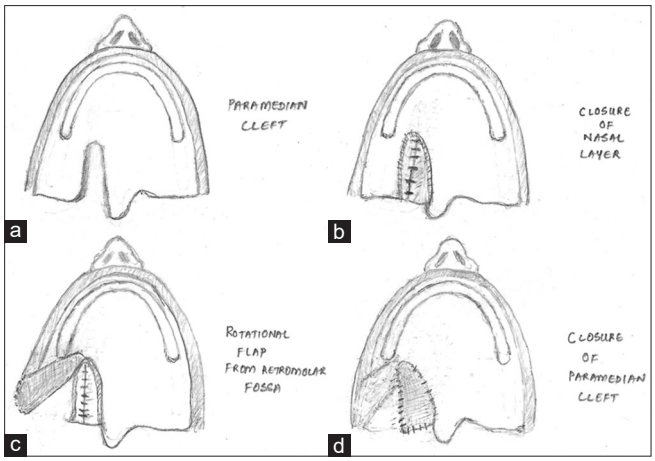


Figure 1: Diagrammatic representation of the procedure (a) Paramedian Cleft (b) Closure of Nasal Layer (c) Rotational Flap from Retromolar fossa (d) Closure of the Paramedian cleft

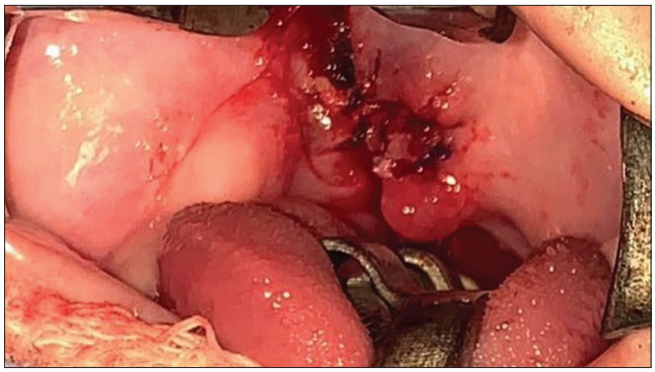


Figure 3: Post op: Closure of Paramedian Cleft

paramedian cleft palate. The parents of the baby are relatives (consanguineous marriage). The mother of the patient is with insulin dependent diabetes mellitus (Type I) and medullary cystic kidney disease. After obtaining consent from the parents, this patient was successfully operated in November 2021 at age of 15 months.

Surgical Technique

The cleft palate in this patient as shown in Figure 1 was not ideally in the midline. It was unilateral in the right side and incomplete making it a challenge to go about the conventional incisions and dissection. The edges of the cleft were demarcated on the soft palate, which was infiltrated with 2% lidocaine combined with a vasoconstrictor (1: 100,000) for local anaesthesia. An incision was made on the edges, and the plane of the oral and nasal mucosa was dissected. The nasal mucosa was closed first with 4-0 Vicryl Suture and then the oral layer. However, there was a challenge to close the oral layer which was deficient and we modified the technique using a rotational, oral mucosal flap from the retromolar fossa [Figure 3] and closed the oral layer with 4-0 Vicryl Sutures. As shown in Figure 2, the uvula was intact. One week post OP review [Figure 4] showed adequate closure of the cleft.

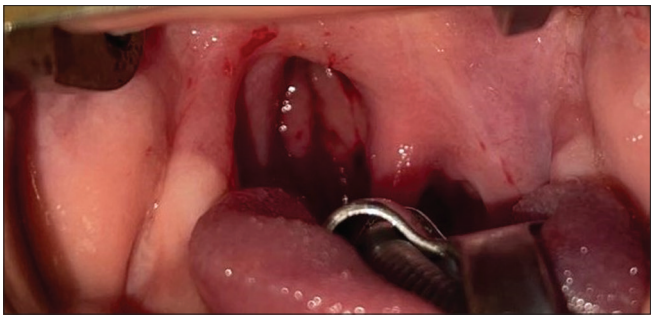


Figure 2: Pre-op: Paramedian Cleft

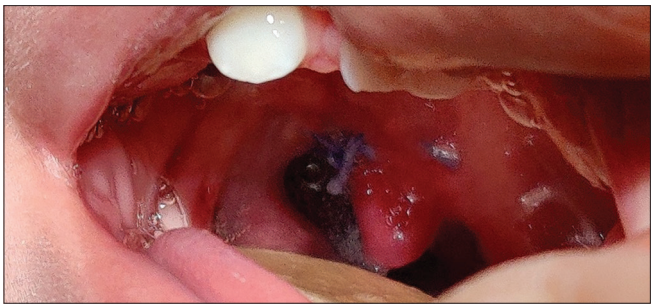


Figure 4: One week post op

Discussion

Von Langenbeck's palatoplasty is still used and a good option for wide and incomplete clefts because it is simple and facilitates the dissection. Palatoplasty involving the repair of the nasal lining and muscle layer is safe and has a low rate of oronasal fistula. This occurrence depends on various factors such as patient age, cleft type and extent, association with syndromes, surgeon experience, suture tension, bleeding, infection and of course post-operative care.

In our centre, we follow the protocol of cleft palate surgery at the age of 6–18-month time period and also in one stage.

The controversy of the palatoplasty procedure includes the ideal age for surgery which affects facial growth as minimal as possible and allows adequate speech development.

The conventional palatoplasty von Langenbeck's technique still remains a popular choice amongst most surgeons around the world and is a good option for wide and incomplete clefts because it is simple and facilitates the dissection.[4-6] Here, in our case, due to the paramedian position of the cleft, made us to modify the technique from the conventional incisions because it would not have helped in the closure of the cleft (oral layer) in this particular case. We achieved good nasal layer closure but the oral layer closure was a challenge which was not achievable by the conventional technique as it was causing much tension to the oral tissues while closure which would lead to the opening of the wound and later a fistula. Hence, we modified the technique by taking a rotational oral mucosal flap from the retromolar fossa to close the oral layer as shown in the figures.

Conclusion

Conventional surgical techniques are the basics for closure of the cleft palate to achieve a good functional outcome, but in very rare cases, as shown in this case report, a simple modification can help in adequate closure.

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Nil.

Conflicts of interest

There are no conflicts of interest.

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