CASE REPORT

Midface fracture in an unoperated adult patient with cleft palate

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Accepted 26 July 2014

SUMMARY

In western countries, it is hard to find an unoperated cleft palate due to better healthcare services and awareness. Here, we present an unoperated adult case of cleft palate that had midfacial fractures following a road traffic accident. The patient's cleft lip was repaired when he was 2 years old but the palate was not operated because of poor follow-up. We would like to share the difficulties encountered in diagnosis and treatment planning for this rare kind of trauma case. After routine investigations, a palatal acrylic splint was constructed for fixation and an acceptable degree of function and aesthetics was achieved postoperatively.

BACKGROUND

Cleft lip and palate is a congenital anomaly with variable incidence around the globe.¹ Most western countries have been successful in treating it early in life. In India, many adult cases are still being operated on. Many untreated cases of cleft anomaly report to outpatient or casualty departments for reasons other than cleft deformity. In developing countries, there is a lot of aggressive screening to provide comprehensive treatment for the same anomaly.

Not much literature is found that is related to management of trauma in adult patients with unoperated cleft as it is hard to find a case in the western world where the cleft has been left untreated. We came across an interesting case of midface fracture due to a road traffic accident, having unoperated cleft of palate. Although a satisfactory outcome was obtained, this case left us with a question mark at the end because of its rarity.

CASE PRESENTATION

A 22-year-old male patient was brought to casualty in a semiconscious state with a history of a road traffic accident. There was no history indicating neurological insult. Vitals were stable with a saturation level of 100%.

On examination, the patient had lacerations over the right side of the nose and the left infraorbital region. Bilateral circumorbital oedema was present with tenderness and mobility in the malar region on both sides. Intraorally, there was palatal laceration and blood clots. Occlusion was deranged with both the maxillary segments apart and mobile, giving an impression of a midpalatal split. The patient was not able to elicit history due to trauma and poor speech that added to the confusion as it was present due to mobile maxillary segments. On

careful examination, a scar was found on the upper lip within the moustache hair which raised the suspicion of a cleft deformity.

Finally, the patient's relatives reported to the hospital and the history of lip repair was revealed. The patient's lip repair was performed at the age of 2 years, and since then there had been no follow-up for the repair of cleft palate.

INVESTIGATIONS

The CT ([figure 1](#)) showed fractures of the lateral orbital walls (bilateral), anterior and posterior walls of the maxillary sinus (bilateral, with comminution on the left), left zygomatic arch, bony nasal septum and pterygoid plates on the left side.

TREATMENT

Now we had to decide the treatment for a midface fracture case that was originally having an open palate. We planned to construct a palatal acrylic splint to stabilise the maxillary segments ([figure 2](#)). Impressions were made for the upper and lower jaws, and casts poured. Taking mandibular teeth as an occlusal guide, a maxillary cast was sectioned and posterior teeth were brought into maximum intercuspation. This position of the maxilla was sealed and both the sectioned segments were joined and a palatal splint was fabricated.

Arch bars were placed preoperatively under local anaesthesia (complete arch bar for mandible and split for maxillary teeth in the area of cleft). In the operation theatre, a Horseshoe Incision was placed intraorally to expose anterior sinus wall fractures and lateral brow incisions extraorally to expose bilateral frontozygomatic fracture sites. The palatal splint was wired to the maxilla through interdental wiring in order to keep the maxillary segments together ([figure 2](#)). Maxillomandibular fixation was carried out using 26 gauge stainless steel wire. Two titanium miniplates, one on each side of the frontozygomatic region, were fixed with screws. Miniplate fixation was also carried out at the right zygomatic buttress. On the left side, an existing laceration was utilised to fix a long seven-hole plate to stabilise the zygomatic and maxillary segments ([figure 3](#)). In the end, maxillomandibular fixation wiring was released, occlusion rechecked and incision sites closed.

OUTCOME AND FOLLOW-UP

Postoperatively, the splint was kept in place for 21 days and satisfactory levels of function and aesthetics were achieved ([figure 4](#)).

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To cite: Pathak S, Baliga S, Kotrashetti SM, et al. *BMJ Case Rep* Published online: [please include Day Month Year] doi:10.1136/bcr-2014-204018

Figure 1 CT showing (left) fractures of bilateral maxillary sinus walls and pterygoid plates on the left side. Cleft of palate (right).

DISCUSSION

Cleft lip and palate is a developmental disorder as well as a social stigma that needs to be addressed as soon as the child is born. Comprehensive management is required starting right from feeding instructions, presurgical orthopaedics, lip repair and palatoplasty to the correction of secondary deformities.² In India, problems to rectify the condition can be attributed to the large population, illiteracy and limited resources.³

A related case of a mandible fracture has been reported in a patient with bilateral cleft lip and palate who was treated prosthetically.⁴ In the midface fracture case that we encountered, at

Figure 3 Postoperative Water's view showing miniplate fixation (two position screws can be seen, which were removed later)

the time of diagnosis it was difficult to think about the unoperated cleft palate as palatal split is frequently found in midface fractures.⁵ Inappropriate speech and CT findings were also inconclusive as they would be the same in the patient with a

Figure 2 Palatal splint in place.

Figure 4 Postoperative frontal view with occlusion.

cleft and in the midface fracture with palatal split. It was the precise history and lip scar that led to the actual situation and treatment plan.

As far as treatment planning was concerned, we did not know what type of occlusion to achieve because cleft palate patients have hypoplastic maxilla and posterior crossbite.⁶ We had no idea about the patient's previous occlusion and giving him a new and ideal occlusal relation would have further widened the cleft, which could be a problem in repairing the palate at a later stage. Keeping in mind the fact that arch expansion is usually required to correct the posterior cross bite in such cases,⁷ we decided to bring teeth into maximum posterior intercuspation, stabilise the upper segments with a palatal splint and then perform the miniplat fixation.

Learning points

- Unoperated cleft lip and palate cases having trauma could be difficult to diagnose in the emergency room without a proper history.
- Treatment planning could be even more difficult because of the unavailability of standard guidelines.
- Trauma to the tissues may lead to more fibrosis and poor outcome of the palate repair in future.

This case made us realise the amount of work that had to be carried out to cover up the backlog of unoperated cases of cleft deformity. While managing such cases there is still the question of 'What to do?' as there are no guidelines available.

At present, the patient is doing well and the treatment given to him seems to have no adverse effects. Finally, he has been given an appointment for palate repair.

Competing interests None.

Patient consent Obtained.

Provenance and peer review Not commissioned; externally peer reviewed.

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