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SURGICAL MANAGEMENT OF CONGENITAL PALATOSCHISIS IN A KID

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A congenital oro-nasal fistula is an abnormal communication between the oral and nasal cavities involving the hard palate, soft palate, premaxilla or lip (Headrick and McAnulty, 2004). Palatoschisis is occasionally seen in calves, foals, kids, piglets and brachycephalic breed of dogs and is often associated with cheiloschisis or hare lip condition and split jaw or gnathoschisis (Roberts, 1971; Hofmeyer, 1974). Incidence of cleft palate in kid accounts for 5-10% of all congenital anomalies. Aspiratory pneumonia and death are the main consequences of cleft palate, if untreated (Fubini and Duchram, 2004). This case report describes the successful surgical management of cleft palate in a kid by fascia lata homograft transposition.

A week old male kid weighing around 2 kg, with the history of milk draining through nostrils after suckling, frequent sneezing and bleating was presented to Large Animal Surgery-Out Patient Unit, Madras Veterinary College Teaching Hospital. Physical examination revealed oro-nasal fistula with agenesis of the hard palate. Hematology and serum biochemical profiles were within the normal range. Reconstructive surgery was planned by transposition of autogenous tensor fascia lata graft. The harvested graft was sutured to the palatal defect with poly-filament absorbable suture material.

The kid was pre-medicated with tetanus toxoid (@ 0.5 ml I/M). Preoperative antibiotic - ceftriaxone (@ 10 mg/kg) and analgesic - meloxicam (@ 0.2 mg/kg) were administered intravenously. General anesthesia was induced with propofol (@ 4 mg/kg) and butorphanol (@ 0.2 mg/kg) intravenously and intubation was done. The kid was placed on dorsal recumbency. The commissure of lips on both sides was incised and buccotomy (Plate 1) performed to open the mouth widely to allow visualization and surgery of the hard palate. A sliding bipedicle flap was pre-planned, but as the defect was extensive, tensor fascia autograft was harvested (Plate 2) and sutured to the palate defect. A cranio-lateral linear skin incision was made on the left lateral thigh region and subcutaneous tissue and fascia dissected. Tensor fascia lata graft of appropriate size for the cleft width was excised and soaked in saline solution for 2-3 min. The graft was implanted and fixed to the hard palate and its border, soft palate border and the anterior third of soft palate (Plate 3). The graft was sutured with a mucoperiosteal layer of the hard palate with polyglycolic acid (PGA) 1-0 suture material in a simple interrupted suture pattern. The donor site of the graft was closed in routine two layers. First layer of subcutaneous tissue with PGA 1-0 suture material in a simple continuous pattern and second layer of skin were closed with polyamide 1-0 in cross mattress pattern. The buccotomy incision was closed in three layers of mucosa, muscles and skin as per standard surgical procedure (Plate 4). Post-operative fluids, antibiotics and analgesics were administered for five days. The owner was advised to feed the kid through feeding bottle and avoid direct suckling as it may lead to aspiration pneumonia. The kid recovered uneventfully.

Congenital palatal defects result when the two palatine shelves fail to fuse during fetal development. Incomplete closure of the hard palate is attributed to

inherited (recessive or polygenic traits), nutritional (inadequate folic acid), hormonal (steroids) and toxic factors (Fossum et al., 2002). The common surgical techniques for closure of the hard palate and soft palate defects include sliding bipedicle mucoperiosteal flap or overlapping flap technique. If the defect is too extensive, fascia lata homograft can be harvested and sutured with the hard palate and a cranial aspect of the soft palate to close the defect (Akoz et al., 1995). The common surgical approaches of cleft palate repair are oral using laproscopic instruments, transhyoid pharyngotomy and mandibular symphysiotomy (Fubini and Duchram, 2004). In the above case buccotomy was done on both sides to approach the hard palate without any difficulty.



Plate 1. Bilateral buccotomy incision for wide exposure of oral cavity

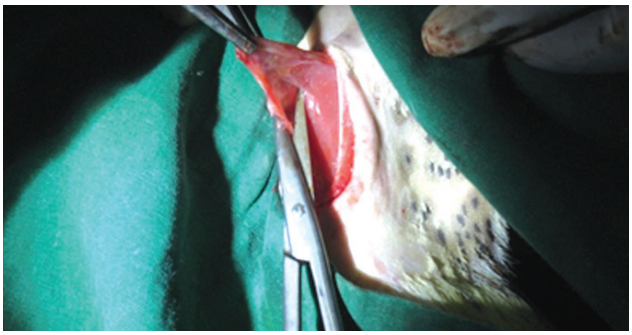


Plate 2. Harvesting tensor fascia lata homograft



Plate 3. Suturing of the fascia lata graft with the hard palate

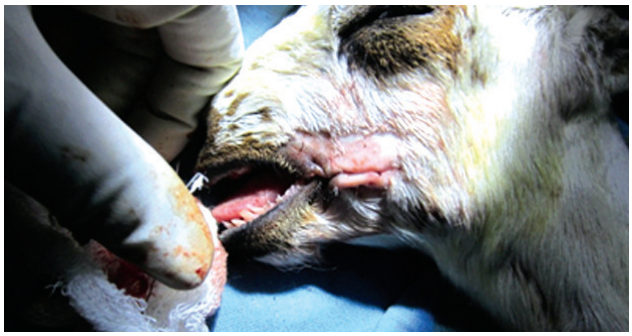


Plate 4. Closure of buccotomy incision site

The fascia lata is the deep fascia of the thigh forming an exoskeleton for its muscles. It is a fibrous tissue sheath that envelops the muscle groups of the thigh. It is thicker laterally than medially (where it is more exposed) and the thickening is called the iliotibial tract or band (Kargi et al., 2002). Fascia lata is a homologous tissue, strong and pliable, with no risk of foreign body reaction and a very low risk of infection, which can be cut and shaped as required in any type of reconstructive procedure (Gurdal et al., 2003). Due to its relative acellular nature and the low nutritional requirements of fascia, fresh autogenous fascia lata is a more desirable material because there is minimal to no tissue reaction or rejection and it maintains its original tensile strength. It was also used to replace the anterior cruciate ligament in goat and repair of recurrent tracheoesophageal fistula (Fubini and Duchram, 2004). In the above mentioned case fascia lata homograft was utilized to suture the palatine defect as the oro-nasal fistula was extended to be closed by bipedicle advancement flap or overlapping flap technique.

SUMMARY

Cleft palate is a congenital defect and is more common in kids and calves. There are no reports of fascia lata graft transposition for cleft palate repair in goats. The repair is usually done by sliding bepedicle flap, overlapping flap technique and if the defect is too extensive, fascia lata homograft is harvested for the closure of large oro-nasal fistula. The prognosis is poor if untreated, as it may lead to

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aspiration pneumonia and death. The above case had an uneventful recovery as the surgery was done without any delay.

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