Article published online: 2023-08-24

Indian Journal of Plastic Surgery (1990), 23 (1), *pp.* 1-5

CLOSURE OF PALATAL FISTULA WITH TONGUE FLAP

J.S. BATH, GURPARTAP SINGH AND K.J.S. MANDER

SUMMARY

Forty-five patients having large palatal fistulae (1.5-2cm) which could not be closed with local tissues were selected for this study. Forty-two patients out of this group were treated by anteriorly based tongue flap alone and in three patients a supplementary Burian flap was used. Complete closure of the fistula could be achieved in forty-three cases.

(*Key Words* : Palate fistula, tongue flap, ranine arch.)

The fistulae of the palate may develop as complications of cleft palate surgery, following trauma, removal of tumours, irradiation, syphilitic gumma, leprosy etc. Various procedures have been advocated from time to time for closure of these fistulae such as obturators, closure with adjacent tissue using sliding or rotation flaps, hinge flaps used by Hynes and distant pedicle flaps from outside the oral cavity. But each of the above procedures have their own limitations.

It was in 1963 that the surgical department of the Dermatological Institute of the University of Guadalajara Mexico, began to use tongue flaps for repair of palatal fistulae and the work was published by Guerrero-Santos and Altamirano in 1966. After that various authors have reported successful results of repair of palatal fistulae with tongue flap and various modifications in this procedure have also been reported since then (Cadenat et al., 1973; Guerrero Santos et al., 1973 and Hockstein, 1977; Jackson, 1972; Carreirao and Lessa, 1979).

The introduction of tongue flap with its bulk of vascular soft tissue now make it possible to close palatal fistulae previously considered inoperable.

Material and Methods

A total of forty-five patients having palatal fistulae were treated by tongue flap procedure in Plastic Surgery Department of Medical College/ Rajendra Hospital, Patiala, between 1976-1989. In forty-two patients tongue flap alone was used and in three patients a supplementary Burian flap was used because the fistulae was too far anteriorly placed.

Procedure is done under general anaesthesia with endotracheal intubation. Local turnover flaps (Fig. 1, 2, 3) are raised from around the margin of fistula and sutured so as to make nasal lining. Anteriorly based tongue flap is marked on the dorsum of the tongue according to the size of the defect as shown in Fig. 4. The base of flap can be half or upto two-thirds the width of the dorsal surface of the tongue. Flap thus marked is raised. While raising the flap a layer of muscle is also taken so as to protect the sub-mucosal vascular plexus (Fig. 5). The donor defect on the dorsal surface of tongue is closed directly. Long transfixation suture are passed through the margin of the flap and the edges of the palatal defect. Thus the flap is stitched in place by these sutures (Fig 6). Tongue is fixed by passing a transfixing suture through the floor of the mouth as shown in (Fig. 7) which is removed on the tenth post-operative day. The pedicle of the tongue flap is divided after three weeks. The flap is insetted locally in the posterior part of the defect. The unused portion of the pedicle of the flap is returned to the tongue and adjusted (Fig. 8).

Observations

Patients treated ranged between the age groups from under-one year to twenty years

Fig. 1. Showing Palate Fistula.

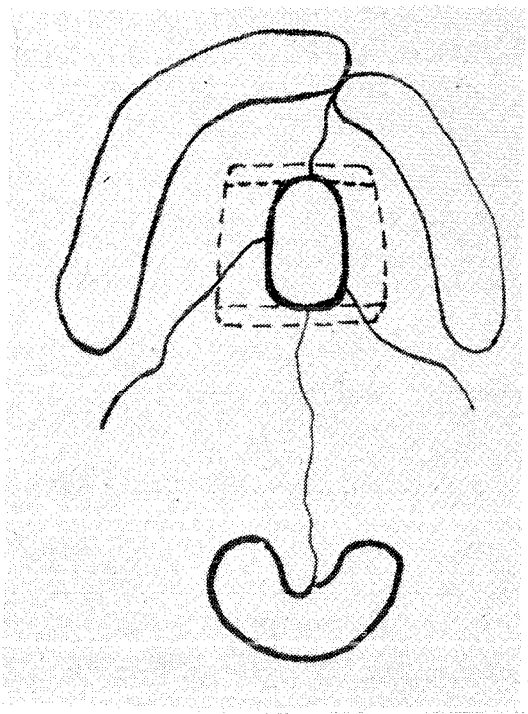

Fig. 2. Showing Palate Fistula and Turnover Flaps Marked.

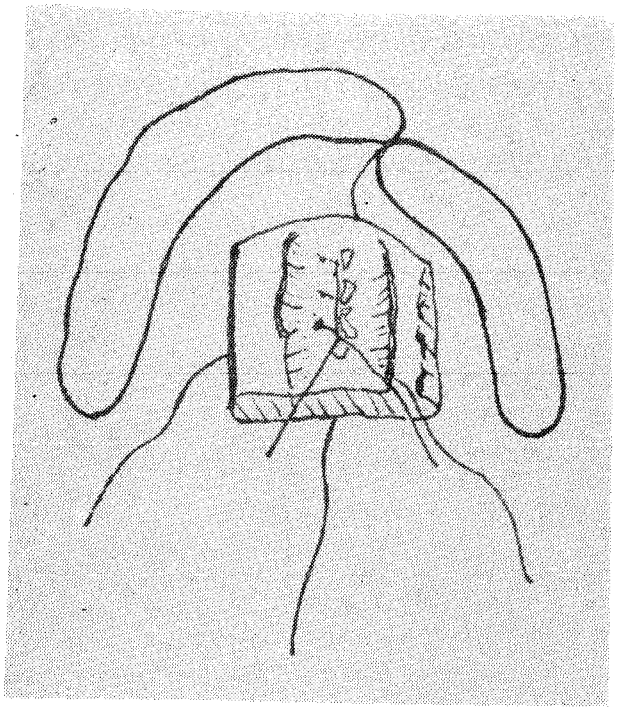

Fig. 3. Showing Closure of Fistula with Trunover Flaps.

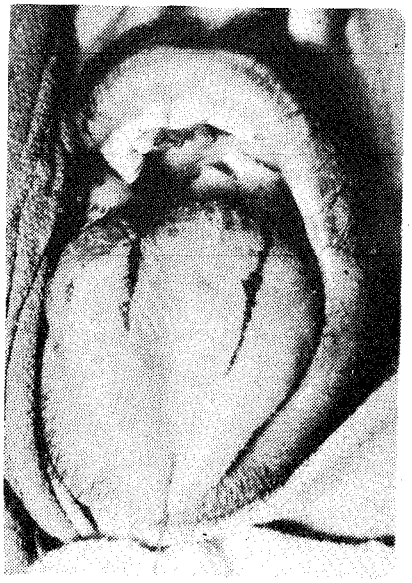

Fig. 4. Flap marked on the dorsum of tongue.

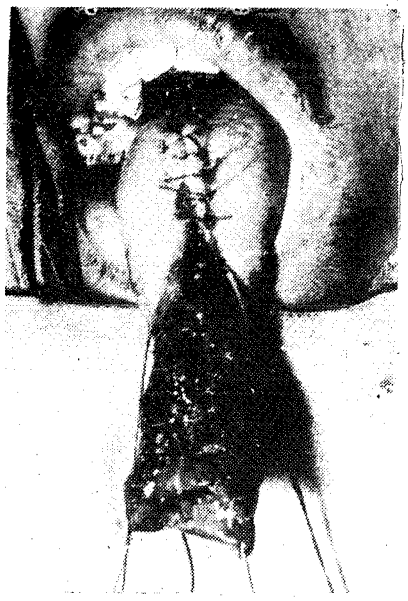

Fig. 5. Flap raised and defect closed directly.

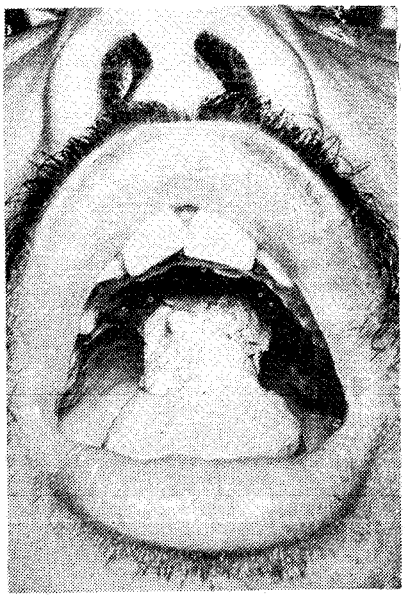

Fig. 6. Flap fixed in the defect.

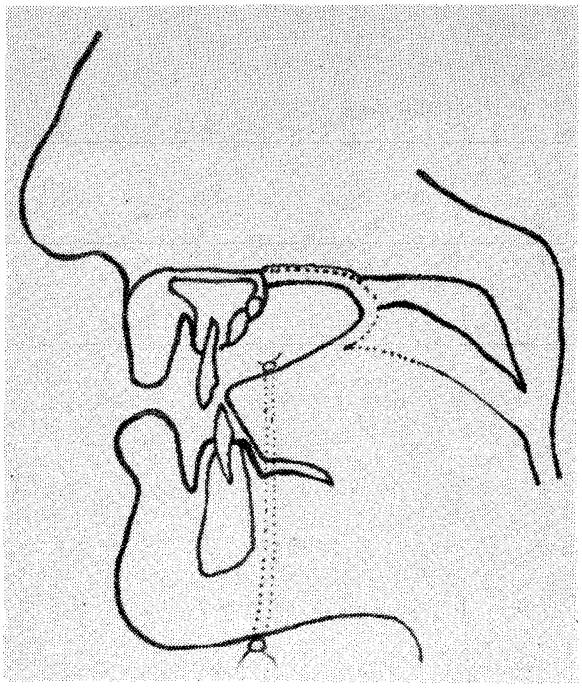

Fig. 7. Showing fixation of tongue.

Fig. 8. Showing repaired Fistula.

Maximum number of patients treated were in 2-5 years age group (Tab. I).

There were 23 male and 22 female patients showing equal incidence in both the sexes (Tab. II).

Table I. Showing age incidence

Age	No.	Age	No.
1	2	5	4
1.5	2	6	1
2	5	7	1
2.5	4	14	1
3	13	16	1
3.5	3	20	1
4	7		
	36		9

Table II. Showing sex incidence

Sex	Numer of patients
Male	23
Female	22
	45

All the fistulae were situated in the anterior part of palate. Their size varied between 1.5 cm to 2.0 cm. All the cases of fistulae were sequelae of cleft palate surgery except one which was due to trauma.

There was loss of flap only in one case, as the patient developed jaundice in post-operative period and another patient had respiratory difficulty and hence the transfixation suture had to be removed. In the rest of cases complete closure of fistulae was achieved and recovery was uneventful.

Discussion

Before the tongue flap repair was practised a number of fistulae were closed by local tissues using turnover flaps but there was high recurrence rate. Some surgeons preferred use of obturators which have got their own limitations.

The tongue has remarkable functional reserve, high mobility and rich blood supply. It can provide flaps which can be used for repairing palatal fistulae. The branches of dorsal artery of the tongue supply predominantly the ipsilateral half. However, a very rich submucous plexus permits random pattern flaps to be raised in any direction (Cadenant, 1972). At the tip of the tongue ranine arch unites both dorsal arteries. Hence this region is chosen as the site of election for the pedicle of the anteriorly based tongue flap. (Carreirao and Lessa, 1980).

Bracka (1981) also confirmed the presence of ranine arch and longitudinal venous drainage system running backward.

Conclusion

The tongue flap for the repair of palate fistulae is a safe and dependable procedure and gives consistently good results.

REFERENCES

1. Bracka : The blood supply of dorsal tongue flaps. British Journal of Plastic Surgery, 1981; 34: 379.
2. Carreirao, S. and Lessa, S. : Tongue flaps and the closing of large fistulae of the hard palate. Annals of Plastic Surgery, 1980; 4: 132.
3. Guerrero Santos, J. and Altamirano, J.T. : The use of lingual flaps in repair of fistulae of hard palate. Plastic and Reconstructive Surgery, 1966; 38: 123.
4. Hockstein, H.J. : The Closing of large residual palatal and velum clefts using tongue flaps. Zahn-Mund and Kieferheil Kunde, 1977; 65: 12.
5. Jackson, I.T. : Use of tongue flap to resurface lip defects and close palatal fistulae in children. Plastic and Reconstructive Surgery, 1972; 49: 537.

The Authors

DR. J.S. BATH, M.S., *Postgraduate Student*, Department of Plastic Surgery, Government Medical College, Patiala.

DR. GURUPARTAP SINGH, M.S., M.Ch., *Assistant Professor*, Department of Plastic Surgery, Government Medical College, Patiala.

DR. K.J.S. MANDER, M.S., M.Ch., *Head, Department of Plastic Surgery*, Government Medical College, Patiala.

Request for Reprints

DR. GURUPARTAP SINGH, Guru Villa, Bhupindra Nagar, Patiala-147001