Research Article

Reconstructive procedures in orofacial malignancies at tertiary care hospital in Aurangabad district of Maharashtra: an observational study

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Abstract

Present study describes the various types of reconstructive procedures undertaken and its outcome in the Orofacial cancer patients at the tertiary care hospital in Aurangabad district of Maharashtra during the study period. Total of 40 cases with squamous cell carcinoma were studied. The procedures done were Split Thickness Skin Graft in 2 cases, Naso-labial flaps in 12 cases, Myocutaneous flaps in 23 cases and free flaps in 3 cases. Pectoralis Major Myocutaneous (PMMC) Flap repair was the most common type of reconstructive procedure employed and it was done in 17 cases. On analysis of complications in PMMC Flap repair, we found partial Flap necrosis in one case, Flap Dehiscence in 2 cases, Infection in 3 cases, Seroma in one case, orocutaneous fistula in 2 cases, restricted jaw movement in 3 cases and Donor site morbidity in one case. Overall outcome analysis in PMMC repair showed good functional outcome in the form of oral diet in 85.5% cases, good speech intelligibility as well as mouth opening in 82.6% patients and good aesthetic outcome in 86.95% patients. Overall functional and aesthetic outcome was found to be best in patients with Free Flap reconstruction and Split Thickness Skin Graft.

Keywords: Split Thickness Skin Graft, Pectoralis Major Myocutaneous Flap, Free Flap, Naso-labial Flap

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INTRODUCTION

Reconstruction of oral cavity is often a difficult challenge as it involves the restoration of both the cosmetics and preoperative function[1]. Reconstructive surgery for Orofacial cancers is a challenging procedure and requires a team of specialists. It is performed regularly only in a handful of medical centers. Till recently the pectoralis major myocutaneous flap (PMMC) was considered to be the best option for oral and maxillofacial reconstruction. This philosophy is changing fast with rapid advancement in reconstructive microsurgery. Years of innovation in reconstructive microsurgery have given us a reasonably good number of very excellent flaps[2]. Present study describes the various types of reconstructive procedures undertaken and its outcome in the patients at the tertiary care hospital in Aurangabad district of Maharashtra during the study period.

METHODS

This study comprises of 40 patients with biopsy proven Orofacial malignancies coming to Government Medical College and Hospital, Aurangabad during the period of August 2011 to October 2013. This hospital is a referral centre for patients with all types of malignancies. After collecting the preliminary data, name, age, sex occupation, religion etc. a thorough history was taken in each case. All 40 patients had biopsy proved carcinomas. A thorough general and systematic examination was carried out for each patient so as to know any associated disease and to judge fitness for general anaesthesia and surgery. In local examination of the lesion, the clinical stage of the tumour was determined by TNM staging. Detail examination of contra lateral as well as ipsilateral

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side of the neck was done for presence or absence of lymph glands. All routine investigations were carried out. Haematological investigations – haemoglobin estimation, total WBC count, differential WBC count, blood grouping and cross matching. Biochemical investigations as blood sugar, blood urea and liver function tests. Radiological investigations like OPG, oblique and A. P. view of the mandible; chest X-ray, CT neck + PNS, Colour Doppler of upper limb were a routine. EKG, cardiology opinion used to be carried out to judge the fitness for general anaesthesia. Before starting any treatment every patient had dental check up. Generally each case of Orofacial malignancy was discussed in group meetings – combination of surgeon, radiotherapist, physicians, pathologist and a plan of treatment was decided. Patients with history of myocardial infarction within 3 months were considered as an absolute contraindication for surgery. The patient whose growths were inoperable and patients who appeared to be having very high risk for General Anaesthesia had not received surgical treatment as a primary line of treatment. These patients were advised radiotherapy. In all other cases, surgical treatment followed by radiotherapy used to be a general plan. In this study 40 patients had undergone a combined operation (primary growth excision plus modified radical neck dissection) with some form of reconstruction. The histopathological report of the surgically operated specimen used to be thoroughly scrutinized with the special reference to the surgical margins and lymph nodes. For reconstruction before operation some tentative plan of reconstruction was decided such as deltopectoral flap, Pectoralis major Myocutaneous flap, Latissimus dorsi Myocutaneous flap, forehead flap and free flap. We have done reconstructive surgery and curative (ablative) surgery at the same sitting. Post operatively, all patients were kept for first two days in intensive care unit and then after in general wards. The minimum hospital stay was 10 days. If some post operative complication occurred such as flap necrosis, orocutaneous fistula then hospital stay was increased. Generally within 25 days the patient received post operative radiotherapy. But due to some complications, the time lag between the surgery and the commencement of radiotherapy may increase. Maximum lag duration was 8 weeks. After discharge patients if undergoing radiotherapy used to visit radiotherapy department. After completion of surgical and radio-therapeutic treatment, patients were tried to follow and maximum attempts to keep a regular follow up were tried. Whenever patient had come for follow up, he used to be examined very thoroughly. Primary site, ipsilateral and contra- lateral side of neck used to be examined for recurrences. Any suspected lesions were biopsied to rule out or confirm the suspicion of recurrence. Patients were instructed for 3 monthly follow up. (Patients very rarely adhered strictly to the rigid follow up schedule). In suspicious cases chest X-ray, liver function tests were carried out. Clinical profile of the study patients are being published separately. Details of reconstructive procedures and outcome are described here. Functional and aesthetic results were evaluated for the 40 patients by the same physician. The following data were recorded for all patients: quality of oral diet, speech intelligibility, mouth opening and aesthetic outcome. Results were scored from 0 to 2, as follows.

Oral Diet

2: normal

1: moderately impaired, restricted diet, soft diet

0: severely impaired or impossible, requiring maintenance of an enteral feeding tube

Speech Intelligibility

2: normal, easily intelligible,

1: moderately altered, intelligible with effort,

0: severely altered or impossible, patient unintelligible for the listener,

Mouth Opening

2: normal, greater than two fingerbreadths,

1: moderately limited, between 1 and 2 fingerbreadths,

0: severely limited, less than one fingerbreadth.

Aesthetic outcome

2: good,

1: acceptable: moderate deformations, depression or misalignment.

0: poor: severe disfigurement, major deformations depression or misalignment that immediately attracts one's attention. The presented outcomes correspond to the results reported at the last follow up visit.

OBSERVATIONS

Table 1: Various type of reconstructive procedures

Lesion	Split Thickness Skin Graft		Nasolabial Flaps		Myocutaneous Flaps		Free Flaps		Total
	M	F	M	F	M	F	M	F	
Buccal Mucosa	1	1		3	12	2	3		**22**
Tongue			1		3	3			**7**
Upper alveolus				1					**1**

Lower alveolus					2			**2**
Upper Lip				1				**1**
Lower Lip			3		1			**4**
Floor Of Mouth			1	2				**3**
Total	**1**	**1**	**5**	**7**	**18**	**5**	**3**	**40**

Table 2: Various Types of Myocutaneous Flaps

Lesion	PMMC	Bipaddled PMMC FLAP	Deltopectoral Flap + PMMC	Total
Buccal Mucosa	10	1	3	14
Tongue	6			6
Lower Lip			1	1
Lower Alveolus	1		1	2
Total	**17**	**1**	**5**	**23**

Table 3: Nasolabial Flaps in various lesions

Lesion	Nasolabial Flap
Buccal Mucosa	3
Tongue	1
Upper Lip	1
Lower Lip	3
Upper Alveolus	1
Floor Of Mouth	3
Total	**12**

Table 4: Split Thickness Skin Graft (STSG)

Lesion	Split Thickness Skin Graft
Buccal Mucosa	2
Total	**2**

Table 5: Free Radial Forearm Flaps (FRFF)

Lesion	Free Radial Forearm Flap
Buccal Mucosa	3
Total	**3**

Table 6: Complications of various reconstructive procedures

Complication	STSG	Naso labial	PMMC	Bipaddled PMMC	Deltopectoralis flap + PMMC	FRFF
Flap Necrosis			1			
Flap Dehiscence			2	1	1	
Seroma			1			1
Infection at Surgical Site		1	3		2	
Orocutaneous Fistula			2			
Donor Site Morbidity			1		2	
Restricted Jaw Movement			3		1	

Table 7: Functional and aesthetic outcome

Score	STSG	Nasolabial Flaps	Myocutaneous Flaps	Free Radial Flaps
Oral Diet				
2	2	11	21	3
1		1	2	
0				
Speech Intelligibility				
2	2	10	19	3
1		2	4	
0				
Mouth Opening				
2	2	12	19	3
1		0	4	
0				
Aesthetic Outcome				

2 1 0	2	11 1	20 3	3

DISCUSSION

Table number 1 show the various types of surgical reconstructions carried out. Myocutaneous Flap repair was done in 23 cases. In 12 cases Naso-labial flap repair was done. Radial forearm free flap reconstruction was done in 3 cases while in 2 cases Split Thickness Skin Graft repair was done. In 23 cases of Myocutaneous repair, 17 cases were PMMC flap repairs, 1 case was Bipaddled PMMC flap and 5 cases were Deltopectoral Flap + PMMC. In our series we managed flap failure conservatively due to limited resources. Table no 6 shows level of complications at recipient site in relation to various reconstructive procedures. It is similar to various published series[3,4]. Most frequent complication was infection. Most common complication was infection at recipient site. Infection was more common in PMMC flap most of time infection started at the junction of graft and recipient site. For all case of infection culture was done and antibiotics were started according to sensitivity. Occurrence of post operative orocutaneous fistula was higher in PMMC flap. Most of fistulas were managed conservatively. Most of the time fistula leading to wound dehiscence resulted in delay for radiotherapy. To conclude, PMMC flaps are obvious choice for intra oral reconstruction in majority of male patients who require single intraoral paddle and have segmental mandibulectomy done as it is easy to harvest, has minimum post operative complication, covers vital structures and provides bulk. Microvascular free tissue transfer is preferred in females, for bipaddled flaps and where large segment of bone has to be replaced. They are better choice for tongue reconstruction. In centers where facilities for microvascular surgery exist; free flaps offer excellent option for oral cavity reconstructions with regard to ultimate cosmesis, function and less complication. Primary closure and STSG can be done in cases where defect is very small or only mucosal so they don't have broad spectrum of use. At the end of the study our conclusion is that PMMC flap is preferred type of reconstruction of oral cavity after excision of tumour as compared to other types of reconstructions or flaps as it is easy to harvest, have good vascularity, provides bulk, can reach up to infraorbital region, is cost effective and has minimum and acceptable complications.

REFERENCES

1. Liaqat B, Ehsan A, Baig AM, Bukhari SG. Orofacial reconstruction with local flaps at AFID. J Ayub Med Coll Abbottabad. 2010 Oct-Dec; 22(4):131-4.
2. George RK, Krishnamurthy A. Microsurgical free flaps: Controversies in maxillofacial reconstruction. Ann Maxillofac Surg 2013;3:72-9
3. Beausang ES, Ang EE, Lipa JE, Irish JC, Brown DH, Gullane PJ, Neligan PC (2003) Microvascular free tissue transfer in elderly patients: the Toronto experience. Head Neck 25:549–553
4. Haughey BH, Wilson E, Kluwe L, Piccirillo J, Fredrickson J, Sessions D, Spector G (2001) Free flap reconstruction of the head and neck: analysis of 241 cases. Otolaryngol Head Neck Surg 125:10–17

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