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To compare neck and shoulder morbidity and effectivity in Tunneled pmmc flaps vs exteriorised pmmc flaps in head neck Oncosurgeries

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Abstract
Method: Patients undergoing PMMC flap reconstruction following head and neck cancer resection will be enrolled as per inclusion criteria excluding the others. Explaining the patient information sheet in vernacular language and obtaining the written informed consent for purpose of study.
Result: The age distribution of patients according to their age groups. Higher 53.3% of them belongs to age group 41-50 Years whereas remaining 46.7% falls under 51-60 Years. The Sex distribution of patients according to which 73% are males and 27% are females. Quick Dash score was compared here for post op 1 and 3 month in exteriorized and tunneled pmmc flaps, post op 1 month mean quick dash score was found to be 47, out of 15 exteriorised flaps 3 showed score more than 47 and 12 less than 47. While 12 tunneled flaps had a score more than 47 and 3 were less than 47. Quick Dash score was compared here for post op 1 and 3 month in exteriorized and tunneled pmmc flaps, post op 1 month mean quick dash score was found to be 47, out of 15 exteriorised flaps 3 showed score more than 47 and 12 less than 47. While 12 tunneled flaps had a score more than 47 and 3 were less than 47. At 3 months mean score was 45.5 of which 15 exteriorised flaps showed a score less than 45.5 and 15 tunneled flaps had a score more than 45.5. P value was found to be 0.000 which is significant.
Conclusion: Shoulder and neck disability are less after exteriorized PMMC flap reconstruction when compared with tunneled PMMC flap reconstruction after head and neck onco surgeries.

Keywords: PMMC, flap reconstruction, head & neck

Introduction
PMMC flap may be detrimental, especially when the flap is placed in an unfavorable recipient bed or when a patient is at risk for compromised wound healing [1].
PMMC Flap is Reliable Easy to raise; technically less demanding, Provides adequate soft tissue cover to carotids, Provides soft tissue bulk as well as skin Donor site can be closed primarily. Cosmetically acceptable on the contrary it is Bulky in females and obese males. Hair growth inside oral cavity in hirsute persons pose some problems in some cases [2].
In contrast, pectoralis major myocutaneous (PMMC) flap is still considered as the 'work horse of pedicled flaps' for head-neck reconstruction. However, with better primary treatment options leading to longer survival, more emphasis is placed on quality of life for the patients. The latter also led to increasing considerations to minimize donorsite morbidity [3]. The use of PMMC flap though associated with high complication rate, it has achieved the reparative goals in most of the patients. Reconstruction with PMMC is done by two procedures by Exteriorisation and Tunneling. Shoulder and neck disability, one of the most important morbidities of head and neck onco surgeries is a major concern in the quality of life of this patients. Shoulder and neck disability associated with head and neck onco surgeries is well recognized and is an important aspect of health-related Quality of life for patients undergoing surgical treatment for head and neck cancer [4].

Material & Method
All cases of PMMC flap reconstruction following head and neck onco-surgeries who are operated in Dept. of Surgery, M.G.M Medical College and M.Y Hospital, Indore. The study will include prospective cases from Feb 2018 Jan 2019.

1. Patients undergoing PMMC flap reconstruction following head and neck cancer resection will be enrolled as per inclusion criteria excluding the others.
- Explaining the patient information sheet in vernacular language and obtaining the written informed consent for purpose of study.
- Patient identity will be kept confidential
- All patients in study will undergo a detailed history taking including general examination and record of all the available investigations will be maintained.
2. Sample of 30 patients will be randomized and divided into two groups of 15 each, both group will undergo reconstruction with a specific technique of either exteriorization or tunneling of PMMC flap.
3. Being a Cohort study all patients will complete the quick - Disability of the Arm, Shoulder, and Hand questionnaire (quick DASH score) and limitations in neck range of movement (ROM) via gonoimeter at three point of time.
4. Preoperatively
5. At 1 month postoperatively and
6. At 3 months postoperatively.
7. Data will be collected, scrutinized and entered in the observation tables and will be analysed using appropriate statistical methods.

Inclusion criteria: Patients who give written informed consent. Patients of all age groups and gender who are undergoing PMMC flap reconstruction following head and neck onco surgeries.

Exclusion criteria: Patients undergoing reconstruction with any other flap including/excluding PMMC flap surgery for reconstruction of their defects. Patients under PMMC flap for traumatic reconstruction. Patients not willing to give written consent.

Results

Table 1: Distribution on Basis of Age Group

Age Group	Frequency	Percent
41-50 Years	16	53.3
51-60 Years	14	46.7
Total	30	100.0

The above table shows the age distribution of patients according to their age groups. Higher 53.3% of them belongs to age group 41-50 Years whereas remaining 46.7% falls under 51-60 Years.

Table 2: Distribution on Basis of Sex

Sex	Frequency	Percent
Female	8	26.7
Male	22	73.3
Total	30	100.0

The above table shows the Sex distribution of patients according to which 73% are males and 27% are females.

Table 3: Quick Dash Score in follow up post op 1 month

Procedure Done		Above 47	Below 47	Total
Exteriorised PMMC	Count	3	12	15
	%	20.0%	80.0%	50.0%
Tunneled PMMC	Count	12	3	15
	%	80.0%	20.0%	50.0%
Total	Count	15	15	30
	%	100.0%	100.0%	100.0%

Chi Square Test = 10.800, df= 1, P Value = 0.001, *Significant, mean score=47

Table 4: Quick Dash Score after 3 Month followup

Procedure Done		Above 45.5	Below 45.5	Total
Exteriorised PMMC Flap	Count	0	15	15
	%	0.0%	100.0%	50.0%
Tunneled PMMC	Count	15	0	15
	%	100.0%	0.0%	50.0%
Total	Count	15	15	30
	%	100.0%	100.0%	100.0%

Chi Square Test = 30.00, df= 1, P Value = 0.000, *Significant, mean=45.5

Quick Dash score was compared here for post op 1 and 3 month in exteriorized and tunneled pmmc flaps, post op 1 month mean quick dash score was found to be 47, out of 15 exteriorised flaps 3 showed score more than 47 and 12 less than 47. While 12 tunneled flaps had a score more than 47 and 3 were less than 47. At 3 months mean score was 45.5 of which 15 exteriorised flaps showed a score less than 45.5 and 15 tunneled flaps had a score more than 45.5. P value was found to be 0.000 which is significant.

Discussion

In this study while harvesting the PMMC flap from the donor site we implemented two types of techniques in half number of cases we exteriorised the flap through the neck with follow up for flap dissection after 21 days and in other half we tunnelled the flap under musculo cutaneous layer of the neck in it no follow up for dissection was required [5].

Patients undergoing PMMC flap reconstruction surgery were called for regular follow up on first and third month post operatively and were assessed for donor site complications with other disabilities that includes shoulder and neck movements and neck range of movements [6].

In our study we encountered a significant deterioration of shoulder functions and neck range of movements post head and neck reconstruction surgery with PMMC flaps, every patient complained of some degree loss of shoulder functions and neck range of movements along with other complications related to surgery [7, 8].

Conclusion

Shoulder and neck disability are less after exteriorized PMMC flap reconstruction when compared with tunneled PMMC flap reconstruction after head and neck onco surgeries.

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