

Article

FACIAL SOFT TISSUES RECONSTRUCTION METHODS AFTER TUMOR RESECTION IN SOEDARSO GENERAL HOSPITAL 2017 - 2022

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ABSTRACT

Introduction: Facial contour deformity is a very challenging problem for aesthetic and reconstructive surgeons. Assessment of facial deformities is important for developing a subsequent reconstruction plan. Various techniques have been described for the repair of tumor-related defects of facial soft tissues. This study aimed to describe methods of Facial Soft Tissue Reconstruction after Tumor Resection at Soedarso General Hospital, West Kalimantan.

Method: A retrospective descriptive study using data such as age, gender, type of tumor, size of the defect, and type of reconstruction done, which were collected from medical records of all patients with malignant facial soft tissue tumors who have undergone tissue reconstruction after tumor resection at Soedarso General Hospital, West Kalimantan, between 2017 and 2022.

Result: A total of 48 patients were included. 33 patients underwent rotational flap only, 8 patients underwent rotational flap and skin graft, 1 patient underwent transposition flap, 6 patients underwent skin graft. 39 patients had BCC, 7 patients had SCC, 1 patient had MM, 1 patient had Meibom gland Adenocarcinoma. 25 patients were female, 23 patients were male. 41 patients had age 60 years old and older, 7 patients had age younger than 60 years old. 8 patients with defect size larger than 4x4x3 cm, 40 patients with defect size smaller than 4x4x3 cm.

Conclusion: Knowledge of distribution patterns of facial soft tissue tumors will help to correctly choose the right options in facial reconstruction. Unawareness can lead to inadequate treatment with serious consequences for the affected patient.

Keywords: Facial tumor, Malignant tumor, Post tumor resection, Tissue reconstruction

Latar Belakang: Deformitas kontur wajah merupakan masalah yang sangat menantang bagi ahli bedah estetika dan rekonstruksi. Penilaian terhadap deformitas wajah sangat penting untuk merancang rencana rekonstruksi selanjutnya. Berbagai teknik telah dijelaskan untuk perbaikan cacat jaringan lunak wajah yang berhubungan dengan tumor. Studi ini bertujuan untuk mendeskripsikan metode Rekonstruksi Jaringan Lunak Wajah setelah Reseksi Tumor di Rumah Sakit Umum Soedarso, Kalimantan Barat.

Metodologi: Sebuah studi deskriptif retrospektif menggunakan data seperti usia, jenis kelamin, jenis tumor, ukuran cacat, dan jenis rekonstruksi yang dilakukan, yang dikumpulkan dari catatan medis semua pasien dengan tumor jaringan lunak wajah ganas yang telah menjalani rekonstruksi jaringan setelah reseksi tumor di Rumah Sakit Umum Soedarso, Kalimantan Barat, antara tahun 2017 dan 2022.

Hasil: Sebanyak 48 pasien telah dimasukkan dalam studi ini. 33 pasien menjalani prosedur rotational flap saja, 8 pasien menjalani rotational flap dan skin graft, 1 pasien menjalani transposition flap, dan 6 pasien menjalani skin graft. Dari jumlah tersebut, 39 pasien menderita Basal Cell Carcinoma (BCC), 7 pasien menderita Squamous Cell Carcinoma (SCC), 1 pasien menderita Malignant Melanoma (MM), dan 1 pasien menderita Adenocarcinoma kelenjar Meibom. Terdapat 25 pasien perempuan dan 23 pasien laki-laki. Sebanyak 41 pasien berusia 60 tahun atau lebih, sedangkan 7 pasien berusia di bawah 60 tahun. 8 pasien memiliki ukuran cacat lebih besar dari 4x4x3 cm, sementara 40 pasien memiliki ukuran cacat lebih kecil dari 4x4x3 cm.

Kesimpulan: Pengetahuan tentang pola distribusi tumor jaringan lunak wajah akan membantu untuk memilih opsi yang tepat dalam rekonstruksi wajah. Ketidaktahuan dapat menyebabkan pengobatan yang tidak memadai dengan konsekuensi serius bagi pasien yang terkena dampaknya.

Kata Kunci: Tumor Wajah, Tumor Ganas, Pasca Reseksi Tumor, Rekonstruksi Jaringan

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Conflicts of Interest Statement:

The author(s) listed in this manuscript declare the absence of any conflict of interest on the subject matter or materials discussed.

INTRODUCTION

Facial contour deformities present with varied etiology includes trauma, post-surgical defects, congenital defects, and degenerative disease. Surgical resection of facial tumors leads to significant facial asymmetry with irregularities.¹ The unique anatomy of face offers a wide variety of defect situations depending on the extent and location of the resection to be performed.²

Facial soft tissue tumors can be benign or malignant. The most common malignant facial soft tissue tumors are basal cell carcinoma (BCC), squamous cell carcinoma (SCC) and melanoma (MM). Nonmelanoma skin cancer (NMSC) has a greater prevalence in white than all other cancers combined. The World Health Organization (WHO) estimates that 2 to 3 million NMSCs occur annually worldwide.³ The incidence of MM and NMSC is stable and remains significantly lower in people with skin of colour (SoC) compared to white patients, but the prognosis and rates of survival is often poorer among this group. In addition, patients with SoC are more likely to have more aggressive skin cancer, thicker tumors, and metastases on initial presentation.⁴

In treating patients with malignant tumors of the skin and soft tissue around the face, resection of the tumor and surrounding tissue is required. And after surgery, repair of facial skin soft tissue defects or even exposed bones is considered a problem for surgeons. Meanwhile, the cosmetic effect after repair is more difficult to achieve.⁵ There are many techniques used for the correction of deficiencies and asymmetries of facial soft tissues. These techniques use alloplastic materials, such as silicone injection, or autologous tissue transfers, such as grafts and flaps.¹ There is currently no literature reporting the methods of Facial Soft Tissue Reconstruction after Tumor Resection at Soedarso General Hospital, West Kalimantan.

METHOD

This was a retrospective descriptive study based on data collected from Soedarso General

Hospital, West Kalimantan, between years 2017 and 2022. The data collected includes age, gender, type of tumor, size of the defect, and type of reconstruction done. Age grouped into 60 years and older and younger than 60 years old. Size of the Defect grouped into larger than 4x4x3 cm and smaller than 4x4x3 cm.

The inclusion criteria were all patients with malignant facial soft tissue tumors who have underwent tissue reconstruction after tumor resection at Soedarso General Hospital, West Kalimantan, between 2017 and 2022. Patients who were incorrectly coded or had incomplete medical records were excluded. All the data collected from patients' medical record with purposive sampling method. Search for suitable patients by screening according to the International Classification of Diseases (ICD-10) diagnosis criteria. Skin cancer was defined according to the site as "C43" and "C44" according to the International Classification of Diseases, 10th revision (ICD-10) code. Skin cancer sites were categorized into sun-exposed sites (face and neck: ICD-10 codes for C43.0-C43.3, C44.0-C44.3).⁶ The data that has been collected then displayed in tables and diagrams using MS Excel. Ethical approval was not required as this was a retrospective study.

RESULTS

There was a total of 67 patients identified with malignant facial soft tissue tumors who have underwent tissue reconstruction after tumor resection between 2017 and 2022. A total of 48 (72%) patients were included in the final analysis after 19 patients were excluded (10 had incomplete medical records, 9 patients were incorrectly coded). 33 patients underwent rotational flap only, 8 patients underwent rotational flap and skin graft, 1 patient underwent transposition flap, 6 patients underwent skin graft. 39 patients had BCC, 7 patients had SCC, 1 patient had MM, 1 patient had Meibom gland Adenocarcinoma. 25 patients were female, 23 patients were male. 41 patients had age 60 and older, 7 patients had age younger than 60. 8 patients with defect size larger than 4x4x3 cm, 40 patients with defect size smaller

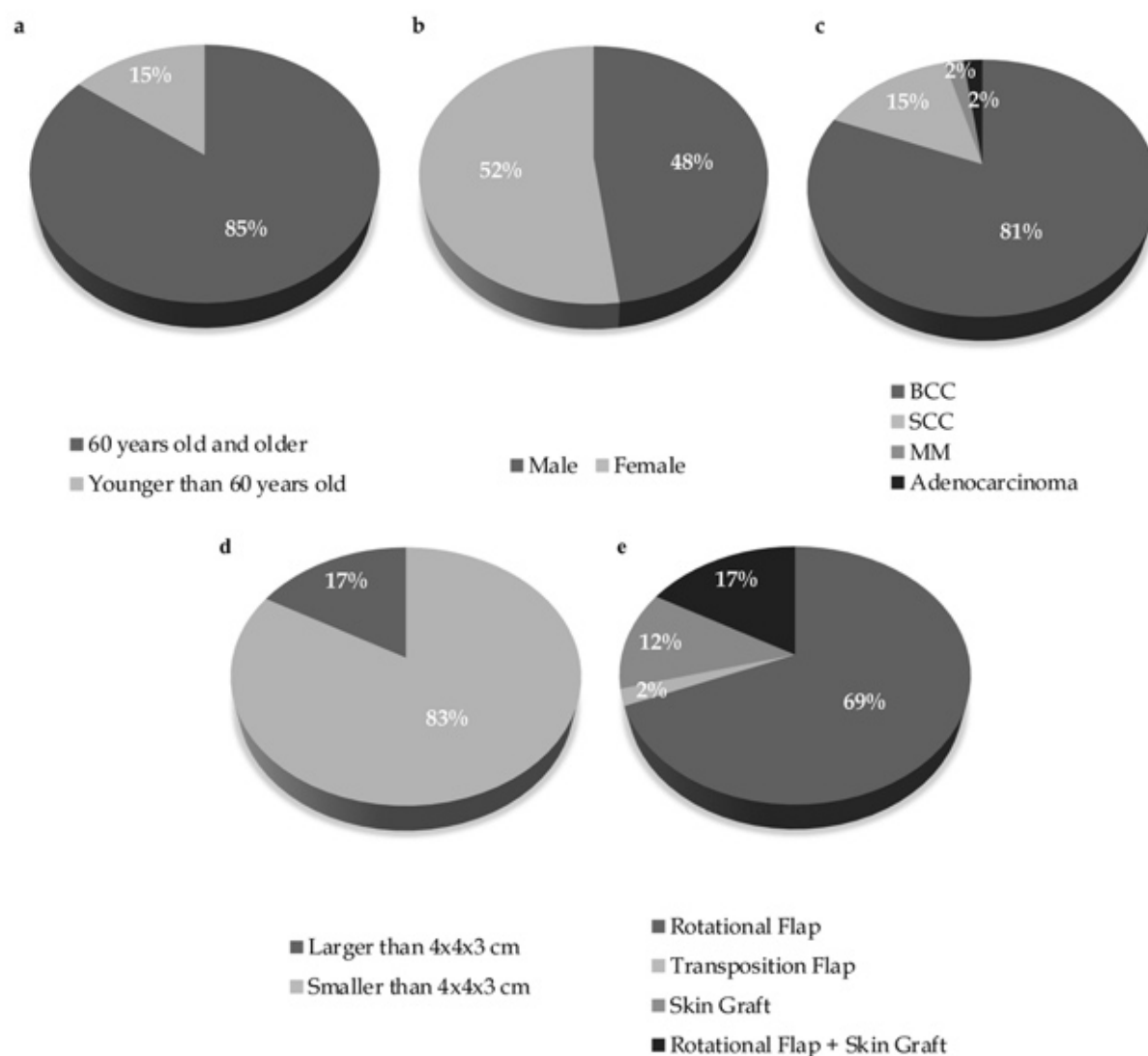


Figure 1. Distribution of malignant facial soft tissue tumors based on (a) age, (b) gender, (c) type of tumors, (d) size of the defect, and (e) type of reconstruction done

than 4x4x3 cm underwent combination rotational flap and skin graft.

DISCUSSION

The incidence of facial skin cancer has increased gradually with changes in the social and medical environment.⁷ From roughly age 20 to 60, females have an excess of cancers, with a distinctive valley in the male: female ratio at about 40 years old. After age 60, during which most cancers occur, males have a significant excess of cancers, rising to about twice the rate of female cancers.⁸ BCC is the predominant type, approximately 80% of NMSC is BCC, SCC comprises approximately 16% of skin cancer

cases, and malignant melanoma represents only 4% of skin cancer cases.⁹ A recent study in Singapore used data from Singapore Cancer Registry from 1968 to 2016 reported that the incidence of cutaneous BCC had increased but SCC and melanoma incidences remained low during this study period. The risks of skin cancers increased sharply with increasing age after 60 years.⁶ Our study showed that BCC was the highest incidence among others skin cancer (81%), and SCC as the second (15%). Patients aged 60 years old and older constituted larger group (85% vs 15%). Female patients were slightly more than male patients (52% vs 48%). Rotational flaps were the most common option for tissue reconstruction after tumor resection

(69%). 8 (17%) patients with defect size larger than 4x4x3 cm underwent combination rotational flap and skin graft.

Current treatment modalities for facial skin cancers and premalignant lesions include surgical excision, electrocautery, curettage, cryotherapy, and irradiation, but surgical excision has been reported to be the best treatment modality for cancer treatment and prevention of recurrence. There are four methods of reconstruction: secondary intention, primary closure, skin grafting, and local and free flaps. Surgery for reconstruction of defects after surgery should be performed selectively and the following points must be considered: surgical method, location of the defect, size, type of the tumor, patient age, health condition, functional aspects, and aesthetic aspects.⁷

Appearance and facial deformities are important aspects that affect quality of life and carry strong social penalties. Multiple studies have shown that facial deformities affect attractiveness, self-esteem, academic and occupational satisfaction, income, and quality of life. Because patients may be concerned about facial contours after tumor resection, soft tissue reconstruction can normalize facial appearance and decrease psychosocial impact by increasing overall patient satisfaction.¹⁰

Choi et al reported that for their NMSC patients, primary closure was the most common method for repairing any surgical defect (38.9%), followed by a local flap (35.5%). In the same study, the coverage of BCC was performed most often by primary closure (39.5%), followed by a local flap (34.2%). The coverage of SCC was most commonly repaired by a local flap (39.5%), followed by primary closure (34.2%). Local flaps are best to match skin color, thickness, and shape of the defect area. Using healthy adjacent tissue results in the best aesthetic outcomes. There are many variations of local flaps for reconstruction, such as rotational flap and transposition flap.¹¹

CONCLUSION

Cutaneous malignancies of the facial region mandate a multidisciplinary and coordinated approach to optimize cure while preserving and restoring aesthetic and function. Reconstruction played an important role in this. Therefore, reconstruction planning must be completed before starting interventions in this important and complex region. Knowledge of distribution patterns of facial soft tissue tumors will help to

correctly choose the right options in facial reconstruction. Unawareness can lead to inadequate treatment with serious consequences for the affected patient.

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