

Surgical Treatment Option in a Recurrent Giant Sacrococcygeal and Gluteal Squamous Cell Carcinoma - Case Presentation

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ABSTRACT

This article refers to the case of a 57-year-old female patient admitted in our clinic for a recurrent giant sacrococcygeal and gluteal squamous cell carcinoma.

In the past, excisional biopsy was performed in another clinic of plastic surgery, followed by tumor excision, chemotherapy and radiotherapy for 6 months.

After one year, the patient addresses our clinic for giant tumor recurrence in the sacrococccian region and bilateral buttocks. The MRI examination carried out highlights a tumor formation that invades both gluteal regions up to the level of the piriformis muscle and the sacrum. No metastases are evident in the pelvis, abdomen and chest. The oncological evaluation recommends surgical treatment to remove the tumor followed by local radiotherapy according to the protocol.

The surgical treatment consisted of wide excision of the tumor formation and local reconstruction with two musculocutaneous rotation flaps of the gluteus maximus muscle.

Radiotherapy was performed for 6 months postoperatively. The follow up evaluation at 6, 12 and 18 month showed favorable evolution without local recurrences and metastases.

KEYWORDS: squamous carcinoma, carcinoma, gluteus muscle flap, gluteal flap, musculocutaneous gluteal flap

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INTRODUCTION

Squamous cell carcinoma is a type of cancer that develops in squamous cells, which are flat cells that form the surface of the skin and certain organs

Squamous cell carcinoma is often associated with exposure to risk factors such as:

- Sun exposure (for skin cancer).
- Long-term use of tobacco and alcohol (in the case of squamous cell carcinoma of internal organs).
- Infections with viruses, such as HPV (human papillomavirus).
- Certain genetic conditions and immunosuppression.¹

Symptoms may vary by location, but for squamous cell carcinoma of the skin, they may include:

persistent lesion or ulcer that does not heal.
an area of thickened, scaly or crusted skin.
a painful or tender lump.

The diagnosis of squamous cell carcinoma involves: physical examination and medical history, biopsy of the affected area, medical imaging (X-rays, CT or MRI scans) to assess how far the cancer has spread.

Treatment may include a combination: surgery to remove the tumor, radiotherapy and chemotherapy, especially in advanced or metastatic cases.

The prognosis depends on the stage of the cancer at the time of diagnosis, the size and location of the tumor and the response to treatment. Squamous cell carcinoma detected and treated early generally has a good prognosis.

The local recurrence of squamous cell carcinoma after radiotherapy and chemotherapy implies a radical and aggressive surgical attitude. The main problem is the radicality of the surgical excision and the ablation of the entire recurrent tumor tissue, especially when the localization involves important vascular and nervous elements. CT or MRI examinations are very important preoperatively to

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assess the degree of local invasiveness and metastasis. Oncological treatment associated with surgery is very important and the prognosis depends on the degree of cellular differentiation, local invasion, presence or absence of metastases.^{1,2}

CASE PRESENTATION

The paper presents the case of a female patient, 57 years old, admitted to our plastic surgery clinic with the diagnosis of recurrent giant squamous cell carcinoma (previously operated in another clinic) with sacrococcygeal localization and invasion in the bilateral gluteal region.

The onset of the condition was registered two and a half years ago in the form of an ulcerated tumor formation in the coccygeal region. An excisional biopsy was performed and also the ablation of the tumor formation was done in another plastic surgery clinic. The biopsy confirmed the anatomopathological diagnosis of squamous cell carcinoma. The MRI examination performed at admission and thoracoabdominal CT do not highlight metastases or regional adenopathies. Postoperatively, for 6 months, the patient underwent oncological treatment (chemotherapy and radiotherapy).

Eight months postoperatively, the patient noticed a rapid tumor recurrence in the sacrococcygeal region with invasion in the bilateral gluteal region. The CT and MRI examination confirm tumor recurrence and locoregional invasion, but without other secondary determinations.

Upon admission to our clinic, the patient presented with a giant squamous cell carcinoma in the sacrococcygeal region and bilateral buttocks. Laboratory tests showed chronic anemia, hypoproteinemia and other metabolic imbalances that required resuscitation therapy in the intensive care unit.

The MRI examination revealed an infiltrative tumor located between the gluteus muscles and sacro-coccygeal area with a maximum thickness varying between 33 and 42 mm. The tumor lesion extends over a transversal distance of 12 cm and a longitudinal distance of approximately 16 cm in the vertebral axis. At the bone level, the tumor formation comes into contact with sacrum and partially invades the coccyx. The tumor formation invades the gluteus maximus muscle bilaterally in the upper part and the left piriformis muscle. Inguinal and ilio-obturator adenopathies are not detected.

The cranial, thoracic and abdominal CT examination does not reveal secondary lesions. The operation consisted in the wide excision of the tumor formation both on the surface and in depth. The excision partially included the coccyx and the external cortex of the sacrum, the upper part of the bilateral gluteal muscles and the left piriformis muscle. It was necessary to ligate both superior gluteal arteries that were invaded by tumor.

The soft tissue defect was 25/20 cm and required reconstruction with two rotational musculocutaneous flaps of

the gluteus maximus muscle. The vascular pedicle was represented by the lower gluteal artery and veins.

Plasty with two musculocutaneous flaps of the gluteus maximus muscle allows optimal coverage of the soft tissue defect with sacral and coccygeal bone exposure. The aspiration drainage was necessary for 7 days and the ablation of the sutures was done 14 days postoperatively.

Postoperative treatment was administered in the intensive care unit and consisted of the administration of rebalancing solutions, broad-spectrum antibiotic therapy, anticoagulants and anti-inflammatories. The patient was kept in prone or lateral position 10 days. Periodic turning in bed was started after 2 days postoperative.

The patient was completely cured 2 weeks postoperatively and the CT examination performed at 4 weeks showed favorable local evolution.

The oncological evaluation recommended local radiotherapy for 3 months after surgery. The periodic evaluations were carried out at 6-month intervals and were carried out clinically and with CT and MRI imaging.

The last control performed 18 months after the reconstruction did not highlight any negative elements from the point of view of clinical evolution.

RESULTS

Reconstruction using rotational musculocutaneous flaps of the gluteus maximus muscle is a technique employed to address defects resulting from the excision of recurrent giant sacrococcygeal and gluteal squamous cell carcinoma. This procedure aims to achieve both adequate oncological resection and effective reconstruction, ensuring coverage of the defect, preservation of function, and aesthetic outcomes. Here are the typical results and considerations following this surgical intervention:

A. Surgical Outcome and Complications:

- **Wound Healing:** The primary goal is to achieve proper wound closure with minimal complications. The robust vascular supply of the gluteus maximus muscle supports healing and reduces the risk of wound breakdown.
- **Infection:** The risk of postoperative infection is a significant concern. Prophylactic antibiotics and meticulous surgical techniques are crucial to minimize this risk.
- **Hematoma/Seroma:** Accumulation of blood or fluid can occur and may require drainage or other interventions.

B. Functional Outcomes:

- **Mobility:** Patients may experience some reduction in the strength of hip extension and external rotation due to the partial or complete use of the gluteus maximus muscle. Rehabilitation and physical

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therapy are essential to maximize functional recovery.

- **Rehabilitation:** Depending on the extent of the surgery and patient's preoperative condition, ambulation might be affected. Most patients can regain satisfactory mobility with appropriate rehabilitation.

C. Oncological Control:

- **Recurrence:** The primary objective is to achieve clear margins to reduce the risk of local recurrence. However, given the aggressive nature of recurrent squamous cell carcinoma, close postoperative monitoring and follow-up are necessary.
- **Adjuvant Therapy:** Additional treatments, such as radiation or chemotherapy, might be indicated based on the pathology findings and margins of resection.

D. Aesthetic and Quality of Life:

- **Cosmetic Results:** The use of musculocutaneous flaps often provides good cosmetic outcomes, although scarring and contour changes are inevitable.
- **Quality of Life:** Successful reconstruction generally improves the quality of life by enabling the patient

to sit comfortably and engage in daily activities without significant limitations.

E. Patient Satisfaction:

- **Overall Satisfaction:** Most patients report high satisfaction levels due to improved functionality and appearance. However, the psychological impact of dealing with recurrent cancer and the recovery process should not be underestimated.

Extended resection in the case of recurrent squamous carcinomas and reconstruction with adjacent musculocutaneous flaps is the recommended surgical approach. The association with oncological treatment (radiotherapy or chemotherapy) is mandatory and the postoperative follow-up must be carried out both clinically and through imaging investigations.

Physiotherapy and psychological support were very important in solving this case. Periodic evaluations at 6, 12 and 18 months showed a favorable evolution without local recurrence or metastases.

The functional and aesthetic result is very good 18 months after the reconstruction and the oncological monitoring is permanent for the rest of the life.

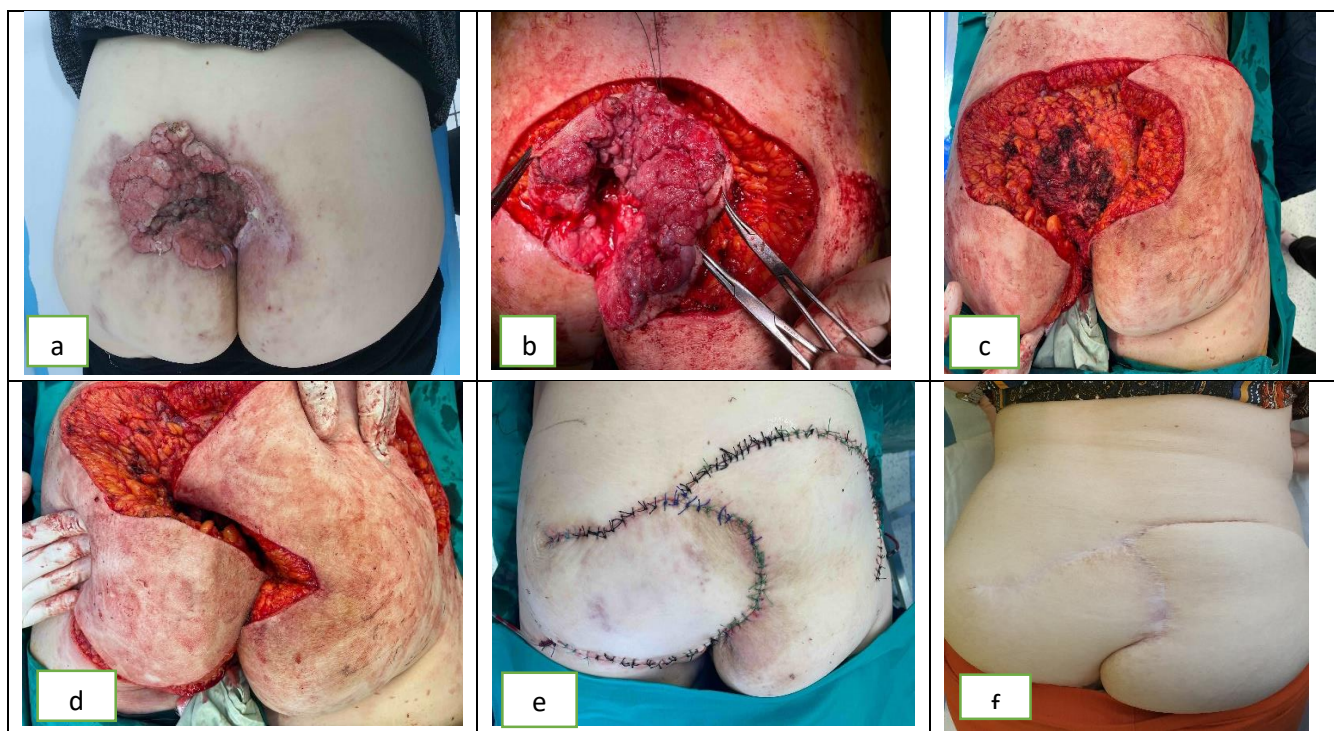


Fig.1 a. preoperative aspect, b. intraoperative aspect, c. tumour resectiond. Gluteus musculocutaneous rotational flaps, e.postoperative aspect (14 days f. postoperative aspect (18 month)

DISCUSSIONS

The gluteus maximus muscle flap is a type III flap that has two vascular sources: the superior and inferior gluteal arteries and veins. The gluteus maximus musculocutaneous rotation flap can work only on a vascular pedicle, in the presented case it is about the lower gluteal artery because the carcinoma

invades both the sacrococcygeal area and the upper portion of the both gluteal region.

The excision of the tumor involved the excision of a large part of the gluteal muscles and the bilateral piriformis muscle with ligation of the superior gluteal artery. The post-excisional defect created is very large (approximately 25/20 cm) and

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includes both the sacrococcygeal region and the upper portions of both gluteal regions.

This required double plasty with bilateral musculocutaneous rotation flaps of the gluteus maximus muscle based on a single vascular pedicle: the inferior gluteal artery.

In this way, we can completely cover the created postexcisional defect.

Complete healing was achieved in 14 days under supportive rebalancing, antibiotic, anticoagulant and anti-inflammatory treatment. 4 weeks postoperatively, the patient started oncological treatment according to the therapeutic protocol, performing radiotherapy sessions for 3 months.

Oncological monitoring was carried out by CT and MRI scans at 6-month intervals. The last assessment carried out 18 month postoperatively reveals the absence of local recurrences and metastases.

CONCLUSIONS

Surgery is indicated for squamous cell carcinoma in several situations:

- Localized tumors without metastasis.
- Tumors that have not responded to other treatments such as radiation or chemotherapy.
- Recurrent tumors.
- Tumors causing significant symptoms or functional impairment.

The success of surgery for SCC depends on several factors, including:

- Tumor size and location.
- The extent of spread (staging).
- Completeness of tumor removal.
- Patient's overall health and comorbid conditions.

Early detection and treatment generally result in a good prognosis for SCC, with high cure rates for localized tumors. Advanced cases with metastasis have a more guarded prognosis and often require multimodal treatment approaches, including surgery, radiation, and chemotherapy. Surgery plays a crucial role in the management of squamous cell carcinoma, particularly when the disease is localized. Various surgical techniques are employed depending on the tumor's characteristics and location. Early intervention and tailored surgical approaches are key to improving outcomes

and preserving function and appearance in patients with SCC. Reconstruction using rotational musculocutaneous flaps of the gluteus maximus for recurrent giant sacrococcygeal and gluteal squamous cell carcinoma can provide satisfactory outcomes in terms of wound healing, functionality, and aesthetics. Close postoperative care and rehabilitation are essential for optimizing results and managing potential complications. 3,4,5,6,7

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