



Panniculectomy with bariatric surgery in super morbid obesity patients



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OBJECTIVE: Panniculitis is an inflammation of the subcutaneous fat common in patients defined as super-super obese (>60 kg/m²). Poor hygiene and skin infections are common in the super morbidly obese group due to impaired metabolism of subcutaneous fat tissue, especially at abdominal folding. In our study, we will discuss the short-term results of panniculitis that develops as a result of these, simultaneously with bariatric surgery.

MATERIAL AND METHODS: In our study, six super morbid obese patients with Body Mass Index (BMI) of 80 kg/m², 77 kg/m², 74 kg/m², 72 kg/m², 68 kg/m², 65 kg/m², respectively, and sub umbilical skin tissue panniculitis were evaluated. These patients underwent bariatric surgery as a result of the obesity council decision. In the preoperative evaluation of the patients, it was observed that the blood supply to the subcutaneous fat tissues under the umbilicus was impaired, and the dermis/epidermis was hypertrophied.

RESULTS: Mean BMI of patients 73 kg/m². Sleeve Gastrectomy (SG) was performed in 4 patients, Mini Gastric Bypass (MGB) was performed in 1 patient, and modified transit bipartition was performed in 1 patient. Infected erythematous lesions were detected on the skin secondary to ischemia, especially in some areas. After the patients performed the operations, a panniculectomy of approximately 70x30x20 cm was performed from under the umbilicus to the transverse line and up to the fascia.

CONCLUSION: Panniculectomy and bariatric surgery are recommended in the appropriate patient group. Extensive prospective studies are required to define further the burden of infectious morbidity and mortality conferred by obesity.

KEY WORDS: Bariatric surgery, Obesity, Panniculectomy

Introduction

Obesity is one of the critical diseases at the root of preventable health problems currently ¹. Today, obesity can be combated with bariatric and metabolic surgery ². Panniculitis is an inflammation of the subcutaneous fat

common in patients defined as super-super obese (>60 kg/m²) ³. It has been associated with numerous causes, including infectious organisms (bacteria, mycobacteria, fungi), pancreatic disorders (inflammation, hyperplasia, necrosis), vasculitis, immunologic conditions (lupus erythematosus and rheumatoid arthritis), drug reactions, neoplasia, nutritional disorders (vitamin E deficiency), and physiochemical factors (trauma, foreign bodies, injections). Poor hygiene and skin infections are common in the super morbidly obese group due to impaired metabolism of subcutaneous fat tissue, especially at abdominal folding ⁴. However, the various aspects of the association between obesity and infection have not been reviewed. Moreover, the intervention of panniculitis, which has the potential to be a source of infection, is limited in the literature. While we perform the weight

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reduction procedure, we can perform treatment for the abdominal apron as well. In our study, we will discuss the short-term results of panniculitis that develops as a result of these, simultaneously with bariatric surgery.

Materials and Methods

Between January 2016-2019, panniculectomy applied patients were analyzed retrospectively. In our study, six super morbid obese patients with Body Mass Index (BMI) of 80 kg/m², 77 kg/m², 74 kg/m², 72 kg/m², 68 kg/m², 65 kg/m² respectively, and sub umbilical skin tissue panniculitis were evaluated. These patients underwent bariatric surgery as a result of the obesity council decision. In the preoperative evaluation of the patients, it was observed that the blood supply to the subcutaneous fat tissues under the umbilicus was impaired, and the dermis/epidermis was hypertrophied. Written informed consent forms were obtained from all patients. All procedures performed in studies involving human participants were in accordance with the ethical standards of the institutional and/or national research committee and with the 1964 Declaration of Helsinki and its later amendments or comparable ethical standards.



Fig. 1: Infected erythematous lesions.

Results

The mean BMI of included patients was 73 kg/m². (Female/Male:4/2) Sleeve Gastrectomy (SG) was performed in 4 patients, Mini Gastric Bypass (MGB) was performed in 1 patient, and modified transit bipartition was performed in 1 patient. Infected erythematous lesions were detected on the skin secondary to ischemia, especially in some areas (Fig. 1).

After the patients performed the operations, a panniculectomy of approximately 70x30x20 cm was performed from under the umbilicus to the transverse line and up to the fascia (Fig. 2). The incision sites were sutured primarily after hemostasis (Fig. 3). The operation time was determined as an additional 45 minutes. The patients were followed up with a vacuum drain for five days postoperatively. The patients were discharged on the fifth postoperative day. On the 15th day, complete abdominoplasty epithelialization occurred, and the sutures were removed. The patients lost an average of 15 kg in the first week and 55 kg at one year follow-up period (Table I).



Fig. 2: Panniculectomy material of an included patient.



Fig. 3: The incision sites after the panniculectomy.

Table I - Characteristics of patients.

Patients	Gender	BMI(kg/m ²)	Operation types	Additional Operation Durations (min)	Weight loss at first week (kg)	Weight of Panniculectomy material (kg)	Complication
1	Female	80	SG	58	20	10	None
2	Female	77	SG	52	18	9.5	None
3	Male	74	SG	46	19	9	None
4	Male	72	SG	41	14	7	None
5	Female	68	MGB	37	10	6.5	None
6	Female	65	TB	36	10	6	None

BMI: Body mass index; SG: Sleeve Gastrectomy; MGB: Mini Gastric Bypass; TB: Transit Bipartition

Discussion

The most effective method in the treatment of morbid obesity is bariatric surgery (5). Accelerating the return of super morbidly obese patients to their daily life activities is one of the main goals of bariatric surgery. (6) Although there has been a study claiming that subcutaneous adipose tissue excision is unnecessary because effective weight loss will be achieved after bariatric surgery (7), this is controversial for super-super obese patients' panniculitis. Incidence of abdominoplasty has risen after bariatric surgeries. Most aesthetic surgeons prefer to delay abdominoplasty after two years of bariatric operation due to final weight loss and body balance. (8) However, it is essential to speed up the process for individuals who have struggled with panniculitis related to high BMI for a long time and are almost immobile, and cannot meet their daily needs without assistance.

Possible advantages of panniculectomy might be:

1. Early mobilization;
2. Reduction of subcutaneous infection;
3. Early weight loss (6-10 kg in the 1st hour postoperatively);
4. More effective psychological concentration on weight loss and healthy living.

Therefore, concomitant panniculectomy, in addition to bariatric surgery in suitable patients, will enable the patient to adapt to his/her new life faster. The simultaneous application of bariatric surgery and panniculectomy has no disadvantages other than prolonging the operation time.

Further research combining panniculectomy with laparoscopic bariatric surgery is required to compare the results obtained by the various techniques. We want to encourage multidisciplinary teams to investigate the benefits of the combined procedure, which includes immediate abdominal apron reduction, prevention of lymphedema of the abdominal wall, improved personal hygiene and quality of life and self-esteem, satisfactory results with no need for revision surgery, and weight loss compared to standard laparoscopic procedure with associated panniculectomy after the patient's weight loss. On the oth-

er hand, the costs and advantages of any intervention should be emphasized, and it is critical to determine if a one-stage or two-stage operation is more cost-efficient based on ultimate results and perioperative problems, even when combining laparoscopic approaches. While the patient is likely to benefit from panniculectomy and has a positive experience, even minor complications can impact the patient's prognosis, surgeon satisfaction, and healthcare costs.

Conclusion

Panniculectomy, together with bariatric surgery, is recommended in the appropriate patient group. However, there is a need for more comprehensive studies with larger patient groups in this regard. Moreover, Large prospective studies are required to define further the burden of infectious morbidity and mortality conferred by obesity.

Riassunto

La pannicolite è un'infezione del grasso sottocutaneo comune nei pazienti definiti super-super obesi (>60 kg/m²). La scarsa igiene e le infezioni della pelle sono comuni nel gruppo super obeso a causa del metabolismo alterato del tessuto adiposo sottocutaneo, specialmente al ripiegamento addominale. Nel nostro studio, discuteremo i risultati a breve termine della panniculite che si sviluppa come risultato di questi, contemporaneamente alla chirurgia bariatrica.

Nel nostro studio, in sei pazienti obesi super con indice di massa corporea (BMI) rispettivamente di 80 kg/m², 77 kg/m², 74 kg/m², 72 kg/m², 68 kg/m², 65 kg/m² e sono state valutate le pannicoliti del tessuto sottocutaneo sotto ombelicale. Questi pazienti sono stati sottoposti a chirurgia bariatrica, e nella valutazione preoperatoria si è osservato che l'afflusso di sangue ai tessuti adiposi sottocutanei sotto l'ombelico era compromesso e il derma/epidermide era ipertrofico.

RISULTATI: BMI medio dei pazienti era di 73 kg/m². La sleeve gastrectomy (SG) è stata eseguita in 4 pazienti, il mini bypass gastrico (MGB) è stato eseguito in 1 paziente e la bipartizione del transito modificata è stata eseguita in 1 paziente. Sono state rilevate lesioni eritematose infette sulla pelle secondarie all'ischemia, specialmente in alcune aree. Dopo l'intervento è stata eseguita una panniculectomia di circa 70x30x20 cm da sotto l'ombelico alla linea trasversa e fino alla fascia.

CONCLUSIONE: La panniculectomia e la chirurgia bariatrica sono raccomandate nel gruppo di pazienti appropriato. Sono necessari ampi studi prospettici per definire ulteriormente il carico di morbilità e mortalità infettiva conferita dall'obesità.

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