

## 'Supersize panniculectomy' with its challenges at a secondary level hospital

'Supersize' panniculectomy is defined as panniculectomy in the obese patient population with a resected pannus (abdominal apron) specimen weight  $\geq 10$  kg and an abdominal apron extending to the mid-thigh level or below.<sup>1</sup>

A 57-year-old lady presented to the emergency department with an infected pannus in septic shock. She had skin breakdown for 3 days with fever and purulent discharge from the wound. She weighed 190 kg and her body mass index was 72. The pannus was long standing, extending well below her mid-thigh and she had recurrent infections requiring multiple hospitalizations in intensive care unit (ICU). Her comorbidities in addition to morbid obesity included asthma, hypothyroidism, diabetes and nephrotic syndrome.

She was treated with antibiotics and transferred to the ICU for inotropic support and continuous positive airway pressure (CPAP). She improved and was transferred to the ward. Her initial wound swabs grew methicillin resistant staphylococcus aureus (MRSA) and *Pseudomonas* with broad resistance, for which appropriate antibiotics were continued.

Owing to morbid obesity (body mass index  $>50$ ) and the pannus, she could not ambulate and required a wheelchair. This caused her considerable psychological distress.

All treatment options were considered and discussed with the patient. A panniculectomy with abdominoplasty was thought to be the best treatment option. Following anaesthetic assessment, family discussions and control of her current infection, it was decided to proceed with surgery. Clinical suspicion of an associated large hernia could not be confirmed preoperatively as visualization of deeper tissue with an ultrasound was not possible. Computed tomography and magnetic resonance imaging were not options as she could not fit into either gantry. The option of transfer to a tertiary centre was considered but the maximum weight allowed on a Royal Flying Doctors plane, the service that transfers patients in and out of the territory, is 182 kg.

Under anaesthesia, to anchor the pannus, two incisions were made on the lower side of the pannus on either side. Following careful finger dissection avoiding any possible hernial sac, two Kuntscher nails were passed through these incisions to exit on the upper end of the apron. These Kuntscher nails were then suspended with a patient-assisted hoist crane and wrapped in sterile gauze bandages. This was then ramped up to take the full weight of the pannus as shown in Figure 1, to completely suspend it and allow surgery and easy manoeuvrability. This method of abdominoplasty has been described previously in two patients at the Alice Springs Hospital.<sup>2</sup>

Once the pannus was hoisted on the crane, tidal volumes doubled from 350 to 700 mL with the same inspiratory ventilatory

pressures. Scalpel, diathermy and LigaSure Impact device (Covidian, Mansfield, Massachusetts, USA) were used during surgery. Ramping the crane up allowed easy access and lifted the



Fig 1. Pannus suspended by a patient hoist crane.



Fig 2. Pannus delivered weighing 23 kg.



**Fig 3.** Completed panniculectomy and hernia repair.

pannus well off its folds providing adequate tension to aid dissection. The excised pannus weighed 23 kg (Fig. 2). A large para-umbilical hernia was identified in the pannus. This was reduced and repaired with facial sutures to oppose the defect, without a mesh, in view of recent and recurrent skin infections. The umbilicus could not be preserved (Fig. 3).

Post-operatively, the patient was extubated and transferred to ICU. She was subsequently shifted to the ward where she began ambulating. She developed a surgical site infection that was managed with dressing and oral antibiotics and was discharged walking on the 30th post operative day (POD).

Indications for a panniculectomy include chronic panniculitis, voluntary weight loss, acute panniculitis, excess laxity status after weight-loss procedure, recurrent ventral hernia and impaired mobility. A subgroup of obese patients with pannus are unfit for bariatric procedures and their pannus physically incapacitates them, making them unable to maintain levels of activity required for any weight loss. Another subgroup of patients with extreme obesity develop chronic inflammation or intertrigo and chronic wounds in an apron.

Panniculectomy before a bariatric procedure may be considered in these patient populations.<sup>3</sup> Our patient fit both these subgroups. Complication rates following panniculectomy vary from 40% to 60% and include haematoma, seroma, abdominal flap necrosis or infections.<sup>4,5</sup>

Our patient was challenging in every aspect of care of a morbidly obese patient. Challenges ranged from logistics, preoperative workup, anaesthetics, technical feasibility, surgical care, ICU and post-operative care. Surgery at our hospital (as transfer was not an option) was the only way forward to prevent recurrent life-threatening infections and improve quality of life for this patient.

## Author Contributions

**Jonathan Reddipogu:** Conceptualization; data curation; formal analysis; methodology; project administration; validation; visualization; writing-original draft; writing-review and editing. **Mathew Jacob:** Formal analysis; investigation; methodology; project administration; writing-review and editing. **Ayden McGuirk:** Investigation; methodology; writing-original draft; writing-review and editing. **Jacob Jacob:** Conceptualization; formal analysis; project administration; resources; supervision; visualization; writing-review and editing.

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