Thermal trauma to abdominal wall vascularised composite allotransplant

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DESCRIPTION
A 28-year-old woman underwent bowel resection for Crohn’s disease at the age of 9 years with 90 cm of small bowel remaining. She underwent isolated small bowel and abdominal wall transplantation and was taking tacrolimus immunosuppression therapy. She subsequently presented following an accidental burn to the composite abdominal wall allotransplant while cooking. Since she does not have nerve supply to the transplanted abdominal wall, the thermal trauma occurred without her being aware of it. This was confirmed by clinical examination of the burn and subsequent clinical assessment of sensation at the site of the thermal trauma. The burn was superficial partial thickness (figure 1A) and healed completely with conservative treatment and improved over a couple of weeks (figure 1B). Owing to the insensate nature of the abdominal-free flap, she was advised to take additional care in the future to avoid accidental injury to the transplanted abdominal wall.

This case exemplifies the unique and complex nature of this emerging field of transplantation surgery. Abdominal wall vascularised composite allotransplantation is an exciting and evolving field and alleviates the difficulties in closing the abdomen in carefully selected patients. There remains a paucity in the literature on this topic; however, a recent systematic review on the subject has shown that abdominal wall transplantation is technically feasible with low morbidity and mortality with an overall flap survival of 88%. Although the vulnerability of insensate-free flaps to thermal trauma has been previously described, there is little research on functional outcomes in abdominal wall allotransplants and this is the first case in the published literature of thermal trauma to the transplanted abdominal wall. Further research is required on quality of life and functional outcomes in these patients.

Learning points
▸ Patients with irreversible intestinal failure due to short gut syndrome often have a scarred and contracted abdominal wall that leads to loss of abdominal domain. This may create a challenge in closing the abdominal cavity after an intestinal transplant.
▸ Abdominal wall vascularized composite allotransplantation is a potential solution for these patients and offers low morbidity and mortality with good overall flap survival rate.
▸ The transplanted abdominal wall is insensate and these patients should be advised to take additional care with daily activities since significant trauma can occur to the abdominal wall allotransplant without the patient’s awareness at the time.

Competing interests None.
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REFERENCES
1 Mannu GS, Vaidya A. An interesting rash following bowel and abdominal wall transplantation. BMJ Case Rep. Published online: 16 Oct 2013. doi:10.1136/bcr-2013-200991