



## Introduction

The use of autologous bone for cranioplasty has been associated with risks of infection and resorption. Reported rates of postoperative infections are around 12% which is very high for a clean surgical procedure. Various methods have been introduced to reduce this rate, most notably the storage of flap at subnormal temperature. This however predisposes the flaps to increased risk of resorption and poor survival of viable osteocytes. Moreover, these temperatures are financially taxing and difficult to maintain. Comparatively higher temperature ranges provide some degree of protection to surviving osteocytes and from possible risk of resorption, although they are associated with a theoretical risk of increased predisposition to infections.

## Methods

A review was carried out of all cranioplasties performed at our centre. Of these, only those patients were included who underwent an autologous cranioplasty, and whose bone flaps were preserved using institutional protocols for cryopreservation. All patient records including charts, notes and laboratory and radiology data were reviewed for each patient and the data was extracted into a predesigned questionnaire. While reviewing the records specific focus was kept on post-operative infections and its management.

## Results

A total of 88 patients fulfilled the inclusion criteria. Only 3 (3.40%) patients were found to have signs of infection, of these, two patients had superficial surgical site infections which resolved with oral antibiotics (Co-Amoxiclav 1 gm BD for 7 days). However the third patient required re-exploration and washout. All three patients had complete resolution of infection with preservation of autologous bone.

**Table 1: Details of patient with wound site infection**

Patient details	Indication	Infection diagnosed	Type of Infection	Culture	Antibiotic duration	Other procedure	Follow up
36/M	Blunt TBI	5th POD	SWSI	-	2 weeks	None	3 months
30/M	Blunt TBI	7th POD	SWSI	-	2 weeks	None	5 months
28/M	Blunt TBI	14th POD	DWSI	Staphylococcus aureus	3 weeks	Wound exploration, wash out	2 years

SWSI: Superficial wound site infection, DWSI: Deep wound site infection, TBI: Traumatic brain injury, POD: Post-operative wound site infections

## Conclusions

Autologous cranioplasty without autoclaving or any other form of treatment is a safe procedure. Storage of bone flaps at -26 degrees centigrade does not predispose it to a higher risk of infections compared to lower temperatures.