

## Replantation Of Arm In Children: A Rare Case Report

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### INTRODUCTION:

Replantation is a procedure to recover the form and function of an amputated limb by reattaching the existing neurovascular and musculoskeletal structures.<sup>1</sup> In 1962, Malt successfully replanted a completely amputated arm of a 12 year-old boy in Boston. Komatsu and Tamai reported the first successful replantation of an amputated digit by micro vascular technique.<sup>1</sup> The absolute indications for replantation are any upper extremity amputation of a child, clean and straight guillotine amputations, thumb amputation, and multiple finger amputation. Thus, this is a rare case report of replantation for salvaging left transhumeral amputation of a boy with a successful outcome.

### MATERIALS & METHODS:

#### Case report

A 8-years-old, Malay left handed boy, alleged motor vehicle accident on 27 January 2017. Patient is pillion rider on a motorcycle that suddenly skidded. The left upper limb stuck in between the rolling sprocket and chain leading to devastating left arm amputation. The patient sustained no others injuries. Then, a witness immediately buys an ice bag from shop nearby and the amputated part was well preserved. The patient rushed to Klinik Kesihatan Bandar Tun Razak and sent to Hospital Segamat with an ambulance. Mangled extremity severity score (MESS) was 7.



Figure 1: Picture of amputated left arm of the boy

Following a complete trauma work up, after consented from parents the patient was brought to the operating room three hours post trauma and undergone the replantation procedure. Intra-operatively; the bone injury was a spiral-comminuted fracture of the distal third of humerus which was typed as a IIIC according to Gustillo's Classification. There were many

free devitalized bone fragments, which were debrided. Upon further exploration, noted 5 cm traumatic defect of the radial nerve with total cut of ulna and median nerve. The brachial artery, basilic and cephalic vein are totally cut. The jagged soft tissue loss includes lateral head of triceps brachii muscle, almost all of biceps brachii, brachialis, and coracobrachialis muscles cut. The spiral fracture converted to simple transverse fracture with 1cm shortening to allow artery repair. The fracture fixed with a plate. Brachial artery, basilic and cephalic vein repaired with end to end anastomosis. The median nerve attached to musculoskeletal nerve. Next, the crush injury of left thumb fixed with axial K-wire. Post operatively, the circulation is good. Patient doing good on antibiotic therapy and daily dressing in ward.



Figure 2: Picture during and after procedure

### DISCUSSIONS:

Preservation of the amputated part is critical on major upper extremity replantation, and cooling should continue until anastomosis is completed.<sup>1</sup> Decision making in replantation must take multiple factors into consideration as an amputation is the sum of a vascular injury, open fracture, a soft tissue injury and a nerve injury, reattachment of the individual parts can result in severe morbidity during and after surgery. The major goal is to reestablish limb perfusion and minimize ischemia time.<sup>1</sup> We must be mindful of immediate and future goals including revascularization and recovery of functions.

### CONCLUSION:

Pre-operative, intraoperative and post-operative care is detrimental for the survival of replantation.

### REFERENCES:

1. Goldner RD, Urbaniak JR (2011) Replantation. In: Green DP, et al. (Eds.), Green's Operative Hand Surgery (6th edn), Churchill Livingstone, New York, USA, pp. 1553-1753.