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*ASPECT OF CURRENT MANAGEMENT*

# Beware of finger tourniquets : A case report and update by the National Patient Safety Agency

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**Finger tourniquets have been used in finger surgery for a long time to provide a bloodless field while operating on digits. Many different techniques have been described for a 'safe and reliable' finger tourniquet including Penrose drains, coloured rubber gloves and gloves with haemostat.**

**The potential injury that can be caused by leaving the tourniquet *in situ* for longer than is necessary is devastating to the patient. Although there have been many articles describing a safe tourniquet technique, vigilance needs to be maintained by the operating surgeon to remove the tourniquet.**

**We are presenting a case of retained finger tourniquet to highlight this problem and highlight the rapid response report published by the National Patient Safety Agency in December 2009.**

**Keyword** : finger tourniquet.

## INTRODUCTION

Finger tourniquets have been used in finger surgery for a long time to provide a bloodless field while operating on digits. Although many 'safe' methods have been previously published and widely used, cases of retained finger tourniquet still unfortunately occur (*1-3, 5*). We present such a case and a method of managing it and also highlight the advice given by the National Patient Safety Agency in the UK to prevent such occurrences as our case (*4*).

## CASE REPORT

A 62-year-old lady presented with an open distal phalanx fracture with a deep laceration which was debrided, washed and closed under a ring block. A finger tourniquet using a cut out glove finger and artery clip was applied. Unfortunately at the end of the surgery, the clip was removed but the glove was not.

This was noticed by the patient's own doctor three days after surgery and the patient was seen in clinic. Unfortunately by this time, the finger was close to being insensate with blistering and bruising. The blisters were incised and drained and the patient was started on antibiotics.

By two weeks post operatively, there was some necrotic skin at the tip of finger and this was partially debrided. A constriction band at the base of the finger was left untreated (Fig. 1).

By one month post surgery, some sensation was returning with normal colouration of skin. The

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***Fig. 1.*** — Picture of the hand taken at the first post operative visit. Note the constriction band left by the tourniquet at the base of the middle finger.

***Fig. 2.*** — Picture of the hand taken at the last visit

constriction band at the base of the finger was softening. The patient continued to be treated conservatively.

At two months post surgery, there was continuing improvement of sensation although some painful dysaesthesia was present. The patient continued to be observed and had exercises with physiotherapy.

At six months post surgery, with continued care the finger has recovered and was saved (Fig. 2). The tip of the finger still has some numbness very distally but apart from that, the patient has a fully functional finger. She has since subsequently been discharged.

## DISCUSSION

Although there have been reports of 'fail safe' digital tourniquets, they are only as fail safe as the surgeons make it. We once again stress the importance of being vigilant.

Our practice in the unit has changed so that commercially available colourful finger tourniquets are used instead of gloves, which was and still is a technique used in many units.

According to the Medicines and Healthcare Regulatory Authority (MHRA), the use of gloves as tourniquet in any form is beyond the manufacturer's intended purpose. As with any off-label use of medical devices, it poses possible risks to the patients and the potential for litigation against the hospital or healthcare professional.

The cost difference between a pair of sterile gloves and the cheapest commercially available finger tourniquet is about £0.50 as set out by the NPSA but patient care and litigation can cost the NHS large sums.

This case also shows that early intervention with these types of injuries with careful management may end with a good result for the patient.

So we recommend that commercially available tourniquets be used for surgery needing finger tourniquets and we should embrace the guidelines as set out by the NPSA which are

1. Guidelines include the removal of digital tourniquets as part of the swab counting procedure and specify the need to record the length of time a tourniquet is in place.
2. CE marked digital tourniquets which are labelled and/or brightly coloured should be used, in accordance with manufacturers' instructions. Surgical gloves should not be used as tourniquets.
3. The WHO Surgical Safety Checklist is reviewed locally to consider adding tourniquet removal at 'Sign Out' stage.

By following the above steps, we believe that tourniquet associated injuries due to retained tourniquet can be completely prevented.

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