

Introduction

The caterpillar technique for removal of a tight ring has been described and proved to be efficient by Dr Carla St. Laurent even when other methods failed. However, we can not find any reported case of using this method for removal of object other than ring that stuck on the finger. Here, we reported the application of this technique aided with procedural sedation administration to aid in removal of a very constricting seven-tooth sprocket on finger.

Case Report

We describe a case of 8-year-old boy with no known medical illness who has been playing with the seven-tooth sprocket. Impressed by the architecture, he decided to put it on his left ring finger even though it was tight. However, it became stuck, constricting and extremely painful by the time he presented to casualty which was about 12 hours post event after multiple attempt to remove it at home was unsuccessful.

Upon arrival, he was conscious and alert, hemodynamically stable but the pain score was 10/10 requiring titration dose of IV Morphine.

The left ring finger was constricted at the base, proximal to the seven-tooth sprocket. Distally, the finger was swollen, tense and cold. Capillary refilling time was 2 second.

In view of that, removal of foreign body had been attempted multiple times including by application of excessive lubricants, soaking in cold water, dental floss and seek assistance from Fire and Rescue Department but only to inflict more pain to the patient.

Finally, we decided to use the caterpillar technique under the procedural sedation analgesia with intravenous ketamine 1mg/kg. Fortunately, it was a successful attempt. The finger's circulation returned to it normal state. Patient was further observed in the Emergency Department for 6 hours before allowed discharge with analgesia and outpatient follow-up.

Discussion

It is very common to receive patient who presented to the emergency departments with ring or ring-like structures that stuck at finger, toe or penis. Usually, they attempted to remove it multiple times at home causing more local trauma to the surrounding tissue. This will further aggravate the swelling hence making the removal more challenging. Apart from that, contact allergy or dependent gravity may worsen the swelling.

This will jeopardize the vascular circulation distal to the constriction and lead to tissue necrosis and amputation.

Several technique for ring removal has been described in the literature but with various degree of success. While the ring cutter may serve a faster and efficient way for thin ring, it might not be successful if the ring is thick including for our patient. The same fate goes with dental floss that often unsuccessful.

We find that the Caterpillar technique, introduced by Dr Carla St. Laurent more than 25 years ago works perfectly in this case especially if combined with administration of procedural sedation analgesia.

Conclusion

The caterpillar technique should be considered early to facilitate removal of the extremely constricting ring-like structure on finger in order to minimize tissue damage caused by the constricted ring as well as providing comfort to the patient. Administration of procedural sedation analgesia can increase the success rate for this procedure.

References and Declaration

References:

1. Carla St Laurent, "The caterpillar technique for removal of a tight ring", *Anesthesia And Analgesia*, 2006.
2. Joan Bothner, "Ring Removal Techniques" UpToDate, assessed online on 10.10.2021

Declaration of conflict for all authors: We declare no conflict of interest in this case report presentation.

Figures



Figure 1 (a) and (b): Patient's left ring finger with constricting seven-tooth sprocket in situ. The distal finger is swollen and there are multiple abrasion wounds from traumatic removal attempt of the foreign body. **Figure 2:** Fire and Rescue Department was called to aid in the foreign body removal but failed. **Figure (3):** Patient's finger post successful removal of the foreign body.

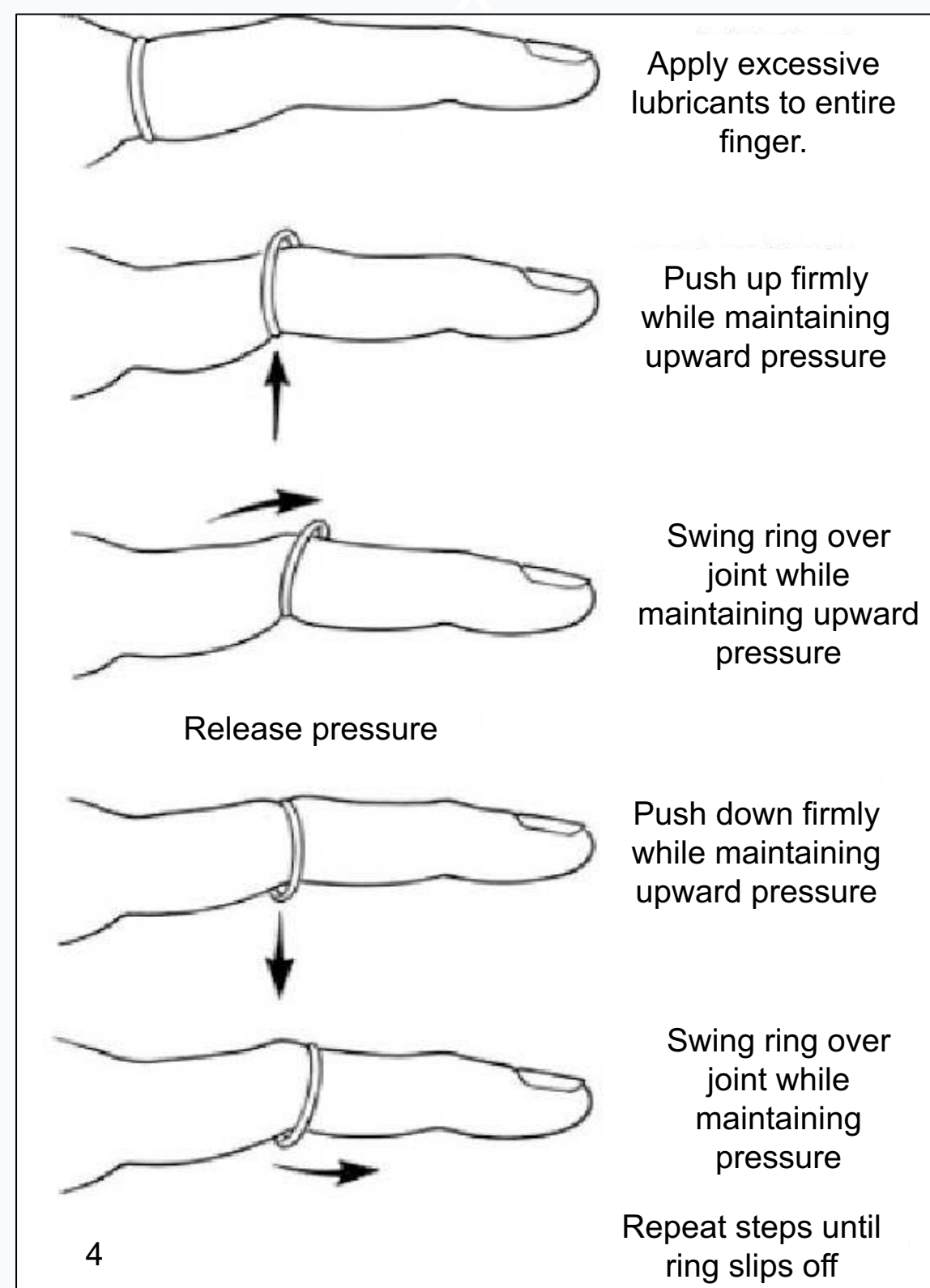


Figure 4: The caterpillar technique. Figure was originally published by Dr Carla St Lauren in *Anesthesia and Analgesia*, 2006.