

Acute Compartment Syndrome of  
the Forearm Following Ulnar Artery  
Puncture in a Patient Stuck by BranchYuan Liang<sup>1#</sup>, Pei Zhang<sup>2#</sup>, Pengtao Chen<sup>1</sup>, Yuanbin Hu<sup>1</sup>, Jinshan He<sup>1</sup> and  
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## Abstract

A case of acute compartment syndrome is described in an old woman following branch stuck to her forearm. She just displayed a little wound with no fractures. The ulnar artery was punctured by a branch and caused a large forearm hematoma and eventually lead to an acute forearm compartment syndrome. Prompt diagnosis and surgical management bring a successful consequence. The written informed consent was obtained from the patient to publish this case, including the following pictures.

## Introduction

Acute compartment syndrome is defined as an increase in intra compartmental pressure cause by a decrease of perfusion pressure. Although this disorder has been describing about 130 years, it is still a challenge to diagnose and treat effectively [1]. To our knowledge, an acute forearm compartment syndrome which without fracture or crush injury is a rare but disastrous clinical condition [2]. Here, we report an acute compartment syndrome caused by a little branch.

## Case report

A sixty-three-year-old woman was admitted to our hospital. Her left forearm was punctured by a little branch. There was only a 0.5-centimeter tear in the skin of her medial forearm, and only a small amount of blood oozed from the wound (Figure 1A). She complained the pain in her swelling left forearm. The patient was otherwise fit and well, taking no medications and with no known allergies. Radiographs showed no fracture. Her left forearm became more and more swollen and painful in the following half hour. Just two hours later, the patient's left forearm became extremely swelling, the patient cried with pain. The distal ulnar and radial pulses were intact. Active and passive movements were resisted by the patient due to severe pain. On the basis of these examinations, an urgent upper limb fasciotomy was performed at once. Compartment decompression was performed through an anterior fasciotomy incision. A large hematoma was found in the process of the operation. To our surprise, we found an incomplete rupture of the ulnar artery which may be the result of acute compartment syndrome (Figure 1B). The ulnar artery was sutured and hematoma was completely

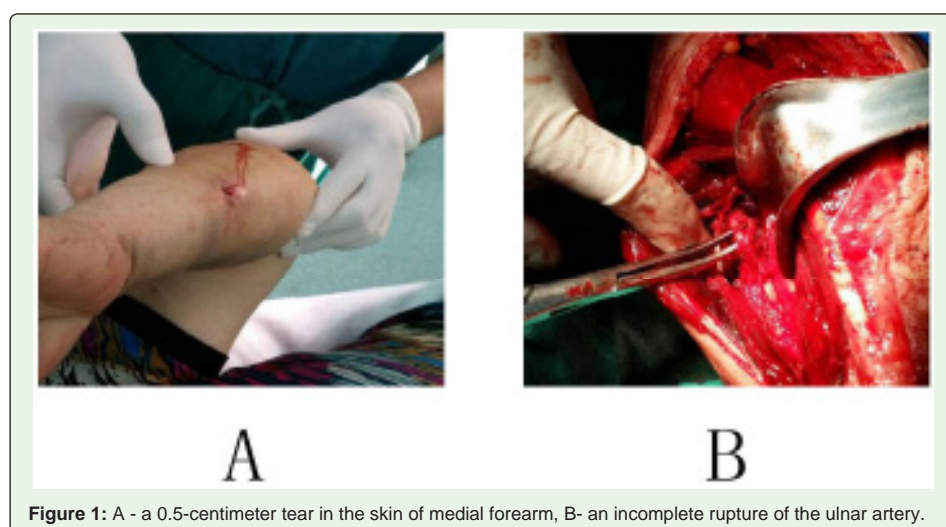


Figure 1: A - a 0.5-centimeter tear in the skin of medial forearm, B- an incomplete rupture of the ulnar artery.

debrided. The fasciotomy wound was treated with Vacuum Sealing Drainage (VSD). The patient recovered well postoperatively with no motor or neurovascular deficit. The wound was closed after five days.

## Discussion

Acute limb compartment syndrome is a limb threatening and occasionally a life-threatening emergency for which timely diagnosis and treatment is essential. Consequences can range from muscle necrosis, limb amputation to renal failure and death [1]. However, there is a few reports about acute compartment syndrome of forearm, particularly in the absence of a forearm fracture [3]. To the best of our knowledge, rupture of the ulnar artery without a fracture or crush injury which lead to a compartment syndrome has not been reported previously. Although this condition was rarely, early diagnosis and

prompt surgical management can obviate the potentially devastating and irreversible consequences of a missed compartment syndrome.

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