

## **BRACHIAL ARTERY PERFORATION: A SPHYGMOMANOMETER RESCUED**

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### **ABSTRACT**

Vascular intervention through radial artery has increased recently compared to femoral artery due to lower incidence of vascular complications. Radial artery perforation although rare, may be catastrophic to patient. We present a case of inadvertent brachial artery perforation which was managed with compression with a sphygmomanometer.

**Keywords:** Radial Artery Perforation

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### **INTRODUCTION**

Although transradial arterial access (TRA) has demonstrated a lower incidence of bleeding and vascular complications compared to femoral and brachial arterial access, complications after TRA nonetheless occur. One complication unique to this approach is the forearm or arm hematoma. Single-center experiences report major hematomas occurring in 0.4% to 0.73% of cases and minor hematomas or bruising in up to 6%. Clinical features such as advanced age, female gender, diabetes, large sheath-to-radial artery size ratio, spasm, atherosclerotic disease, tortuosity and congenital anatomic variations (radial “loop,” accessory or early take of radial artery) are generally associated with vascular and bleeding complications. We present a case of inadvertent brachial artery perforation which was managed with compression with a sphygmomanometer. Although balloon tamponade, covered stent and surgical intervention are well described in the literature, simple brachial artery compression by a sphygmomanometer can rescue from this serious catastrophe (Patel *et al.*, 2009).

### **CASE**

An octogenarian presented with effort dyspnoea class II and ischemic ST -T changes across precordial leads and was subjected to coronary angiogram. Wire was not negotiating the radial loop and balloon



Figure 1: Perforation from a brachial artery twig with small extravasation



Figure 2: Sealed Perforation with compression with a sphygmomanometer c cuff

### **Case Report (Open Access)**

assisted tracking was able to cross the radial loop but immediately a small local haematoma was noted over medial arm for which brachial angiogram was done which revealed small perforation from a twig of brachial artery with small local extravasation. Brachial artery compression with sphygmomanometer at 20 mm Hg higher than the systolic blood pressure was done for one hour with intermittent release every 2-3 min for 15 to 20 secs while monitoring the saturation in right hand fingers. Post compression brachial angiogram revealed sealed off brachial perforation and the patient was discharged next day with anti ischemic medications due to mild coronary artery disease.

### **DISCUSSION**

See and Go” is the rule in wire advancement, is catheter based intervention. Sometimes in spite of extreme cautiousness, due to presence of tortuosity especially in elderly females (Tatli *et al.*, 2015), tip of the slender terumo wire slips into a twig and a little bit of forward pressure even perforates landing in catastrophe. Local compression is the age old maneuvers to seal off the arterial bleeding (Chugh *et al.*, 2015), we compressed the brachial artery with sphygmomanometer pressure cuff 20 mm above the systolic pressure for one hour with intermittent release every 2-3 minutes for 15-20 secs to maintain the forward flow and prevent hand ischemia. Balloon tamponade also seals off the perforation if perforation is not too large and covered stent or surgical intervention is mandated if perforation is large one (Sanmartin *et al.*, 2005) with a large hematoma more than 10 cm with a drop of haemoglobin level more than 5 gm/dl. Most of the perforations induced by the slippery terumo tip is miniature, not mandating emergent intervention; a simple sphygmomanometer can also rescue. Our case is a simple teaching to the budding interventionists that a simple sphygmomanometer can also rescue from a nightmare.

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