

be safe, useful and effective alternative to the iodinated contrast. However, the use of CO₂ below Knee is less effective.

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The Role of the Interventional Radiology in the Management of the Thoracic Outlet Syndrome

Mohammed Al-Toki, Jamal Abdulla

*Department of Radiology, Diakonie-Kliniken Kassel, Kassel, Germany.
E-mail: towki@hotmail.com*

Background: To evaluate the role of interventional radiology for diagnosis and treatment of the Thoracic outlet syndrome (TOS). **Introduction:** Thoracic outlet syndrome (TOS) is a term used to describe a group of disorders that occur when blood vessels and/or nerves in the space between the lower neck and upper chest area (the thoracic outlet) are compressed. Symptoms include neck, shoulder, and arm pain, numbness in the fingers, or weakness, impaired circulation and discoloration of the extremities. Often symptoms are reproduced or worsened when the arm is positioned above the shoulder or extended. Diagnosis of thoracic outlet syndrome is suggested by the symptoms and physical findings and is supported by Electromyography (EMG) and/or radiological examinations. **Materials and Methods:** About 42 patients were examined in our department in 2016, 4 patients underwent venous thrombolysis and angioplasty before the surgery. Every patient had superior thorax aperture x-ray, and cervical spine x ray. Both median cubital veins were punctured and indirect arteriogram for the both subclavian arteries and venogram for both subclavian veins in normal position, in abduction and in hyperabduction position were done. The examinations were done in sitting position. The number of patients with subclavian artery occlusion is more than the patients who had subclavian vein occlusions. We treated 4 patients with venous occlusion and thrombosis with thrombolysis and angioplasty before the operation. **Results:** The number of patients with subclavian artery occlusion is more than the patients who had subclavian vein occlusions. We treated 4 patients with venous occlusion and thrombosis with thrombolysis and angioplasty before the operation. **Conclusions:** Interventional radiology confirms the diagnosis of the TOS, plays an important role in the treatment of their complications and could be an adjuvant therapy to improve the surgical result.

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Emergency Embolization: Patient's Pathway from Phone Call Reporting to Bleeding Cessation: Single Center Experience

Marwa Hosni Bedair, Karim Abd El Tawab

*Ain Shams University, Cairo, Egypt.
E-mail: dr.marwa.h.bedair@gmail.com*

Background: Hemorrhage is a major yet preventable cause of death and long term disability varying from mild self-limiting to massive necessitating angioembolization or surgery. The time from patient injury to hemorrhage cessation critically affects prognosis. We prospectively assessed the emergency protocol and transfer logistics for Emergency Embolization patients in Ain Shams University hospitals in 2016. **Materials and Methods:** 80 bleeding patients were presented from ER or inpatient wards with average haemoglobin concentrations 6 mg/dL. The protocol

followed was reporting cases to IR residents through official IR emergency telephone who instantly reported to on call IR consultant. Patients were transferred by ambulance to the Angiosuite. Polytrauma patients did MDCT whole body and FAST US first. Emergency team did resuscitation via blood products and medical support during transfer. Vascular-sheath was applied by the residents till consultant arrival. **Results:** Average call to angiosuite time was 17 minutes. Average call to Consultant arrival was 73 minutes and call to procedure end was 106 minutes. 1ry cessation of bleeding was achieved in 79 cases, 1 patient with pph needed further hysterectomy. Rebleeding after 48 hours or more occurred in 6 patients 2 of which underwent embolization, 3 died and 1 underwent nephrectomy. Bowel ischaemia occurred in 1 patient with resection of gangrenous sigmoid loop 6 days postembolization. 10 patients died within the first week despite hemodynamic stabilization attributed to marked coagulopathy upon arrival. **Conclusions:** IR plays a major role in management of hemorrhage. Patients transfer time and hemodynamic status are the most important prognostic factors.

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Custom-made Fenestrated Endograft for Patients with Type 1 Endoleak and Previous Endovascular Aneurysm Repairs: A Promising Endovascular Alternative Approach to Open Surgery

Muhammad Affan Zamir, Nich Burfitt, Colin Bicknell, Michael Jenkins, Richard Gibbs, Mohamad Hamady

*Imperial College Healthcare NHS Trust, London, United Kingdom.
E-mail: affanzamir@nhs.net*

Background: Endovascular management of type 1 endoleak in patients with pre-existing endovascular stent graft (EVAR) is quite challenging due to the anatomical limitations. Custom-made fenestrated stent grafts have been proposed to increase the proximal landing zone and thereby eliminate the endoleak. We present our experience in nine patients who have undergone FEVAR using a custom made AnacondaTM graft. The clinical and technical success rate as well as lessons will be discussed. **Materials and Methods:** Retrospective review of patients with type IA endoleaks who underwent FEVAR from 2010-2016. The technical success, vessel patency, reintervention, clinical and imaging follow-up were recorded. **Results:** Nine patients (eight male; mean 80 years, ASA grade \geq III) with type IA endoleaks/aneurysm enlargement were included. Five patients were treated with cuffs whilst four underwent complete re-alignment; 30 side branches were treated with success in 28 (93%). The overall technical success was 88%. Mean hospital stay was 6.8 days with no 30-day mortality. The reintervention rate was 22% related to endoleaks from renal fenestrations. There were no type I endoleaks following the procedures. Two patients died at 6 and 18 months from septicaemia and myocardial infarction respectively and one patient lost to follow-up who died from ruptured aortic aneurysm at 51 months. The remaining patients continue to be followed-up with stable aneurysm sac sizes. **Conclusions:** Custom-made fenestrated stent grafts to treat type 1 endoleak in patients with previous EVAR provide an alternative to open surgery in selected patients, especially in those with significant comorbidities.