



The European Society  
for Cardiovascular and  
Endovascular Surgery

21-24 April, 2016  
*Belgrade, Serbia*

# 65<sup>th</sup> ESCVS

## International Congress of the European Society for CardioVascular and Endovascular Surgery

LATEST NEWS

ESCVS PROGRAM 09.03.2016. | 12:02h

Congress Accreditations 09.03.2016. | 07:30h

### Role of Contrast Enhanced Ultrasound in the follow-up of EVAR with branched and fenestrated endografts

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#### Introduction

Endovascular repair has emerged as an alternative to open repair for patients with abdominal aortic aneurysm. Although the method's safety and efficacy have been established, challenging anatomy and especially inadequate landing zones create limitations to its application. Stent grafts, fenestrated and branched, were developed to overpass these anatomic restrictions. Contrast-enhanced Ultrasound (CEUS) is investigated as a novel, noninvasive technique that can be employed to characterize endoleak type and consequently prescribe appropriate treatment.

**Aim** Our aim was to develop a safe and effective follow-up protocol of patients with abdominal aortic aneurysm treated by EVAR, using an alternative imaging method that eliminates the inconvenience of repeated CT examinations.

#### Material and method

We conducted a prospective comparative study for the evaluation of diagnostic accuracy between Color-Duplex Ultrasound (DUS), Contrast-enhanced Ultrasound (CEUS) and Contrast-enhanced Computed Tomography (CTA) in detecting changes in the abdominal aortic aneurysm (AAA) size and endoleaks during follow-up after EVAR. 60 patients were enrolled in the study of which 12 had fenestrated or branched endografts. Mean follow-up period was 18 months with DUS, CEUS and CTA imaging at 1, 6, 12 months and yearly after EVAR. During the follow-up period 187 investigation sets were performed and analysed.

#### Results

CEUS proved 100% specificity and sensitivity in diagnosing and determining the type of endoleaks after EVAR. CEUS proved to be safe and effective in the follow-up of patients with type II endoleaks as well as in patients with complex aneurysms treated with fenestrated and branched endografts.

#### Conclusions

CEUS is effective in the identification of the type of endoleak, the delineation of the vessel involved, providing hemodynamic information not available with any other non-invasive testing method.

We present an EVAR follow-up protocol based on Contrast-enhanced Ultrasound examination.