Internal Iliac Artery Aneurysm: A Current Review

Frank J Criado, MD, FACS, FSVM
MedStar Union Memorial Hospital
Baltimore, MD USA
Disclosure

Speaker name: Frank J Criado

I have the following potential conflicts of interest to report:

- x Consulting: MEDTRONIC
- Employment in industry
- Stockholder of a healthcare company
- Owner of a healthcare company
- Other(s)

- I do not have any potential conflict of interest
The Isolated Internal Iliac Artery Aneurysm—A Review

F.P. Dix, * M. Titi and H. Al-Khaffaf

Department of Vascular Surgery, Burnley General Hospital, Burnley, UK

Background. The isolated internal iliac artery aneurysm (IIIAA) is rare but rupture has a high mortality rate. This paper reviews the available literature regarding the epidemiology, aetiology, natural history, diagnosis and management with a focus on aneurysms of atherosclerotic origin.

Methods. A literature search was performed using internet databases PubMed, Medline and Medscape followed by manual cross referencing of relevant articles. Data were retrieved from the papers, tabulated and analysed to form a review of atherosclerotic IIIA.

Results. Three hundred and seventy-two papers were found relating to internal iliac artery aneurysms in general and 82 were directly relevant to this paper, reporting 94 cases of atherosclerotic IIIA. For atherosclerotic aneurysms, the median (range) age was 71.9 (47–89) years and 95% were male. The natural history is unclear but is probably one of increasing size, with corresponding increased risk of rupture. Presentation was with rupture in 40%, leading to rapid death if untreated. The death rate in the group as a whole was 31%. The median (range) size of aneurysms at diagnosis was 7.7 (2–13) cm and death was significantly associated with rupture (Spearman correlation coefficient \( r = 0.327, p = 0.007 \)). Symptoms included abdominal pain (31.7%), urological symptoms (28.3%), neurological symptoms (18.3%), groin pain (11.7%), hip or buttock pain (8.3%) and gastrointestinal symptoms (8.3%). Diagnosis may also be coincidental as a result of investigation for other conditions. Of particular use in diagnosis and assessment are ultrasound, computerised tomography and magnetic resonance angiography. Surgical treatment is difficult but can be achieved by ligation, excision or endoaneurysmorrhaphy. More recently, radiological treatments include coil embolisation and endoluminal stenting (often in combination) with the established advantages of endovascular repair have yielded promising short term results, although long term follow-up is required to assess complications and the durability of the devices.

Conclusions. Atherosclerotic IIIA is a rare condition and if undiagnosed is often fatal. Early diagnosis and treatment may reduce morbidity and mortality particularly with the advent of endovascular techniques.
Isolated IIAA are rare lesions (2%) - prevalence as low as 0.03% (more common when co-existing with AAA and/or CIAA)

Male-to-female ratio 6:1

Recommendation was to treat those >3cm, and simply watch smaller ones

Large number had ruptured at time of diagnosis

Natural history somewhat unclear and poorly defined
Internal Iliac Aneurysms have a Low Risk of Rupture under 4 cm: A Multicentre Study

M.T. Laine, M. Björck, B. Beiles, M. Altreuter, Z. Szeberin, I. Thompson, S. Debus, K. Mani, G. Menyhei, M. Venermo
Helsinki University Hospital, Helsinki, Finland
Internal Iliac Aneurysms have a Low Risk of Rupture under 4 cm: A Multicentre Study

M.T. Laine, M. Björck, B. Beiles, M. Altreuter, Z. Szeberin, I. Thompson, S. Debus, K. Mani, G. Menyhei, M. Venermo
Helsinki University Hospital, Helsinki, Finland

Introduction:
Internal iliac artery aneurysms are rare and their risk of rupture is unknown. The definition of common iliac aneurysm is a maximum diameter of greater than 18-20 mm, but there is no clear diameter definition for internal iliac aneurysms. The threshold for elective repair in iliac aneurysms is commonly 30 mm. However, no strong scientific data exists on the risk of rupture. The aim of the current study was to evaluate the size of internal iliac aneurysm at the time of rupture.
This was a retrospective multicentre study including patients with ruptured internal iliac artery aneurysm (RIIAA) from Australia, Finland, Germany, Hungary, New Zealand, Norway and Sweden. The data on aneurysm size at the time of rupture, information on concomitant aneurysms in aorta, ipsilateral common iliac artery as well as contralateral iliac arteries, treatment of the RIIAA as well as outcome were collected from CT-images and patients’ case records.

Results:
In total 59 RIIAA patients were treated during 2004-2014. Median diameter at the time of rupture was 67.5 mm (range 25 to 116 mm). In one patient (1.8%) the maximum diameter was less than 3 cm, in 3 patients (5.5%) less than 4 cm. Mean age at the time of rupture was 77 years. 86% of patients were men. 57% had bilateral IIAA, 64% also had an aneurysmal common iliac artery and 44% also had AAA. 38% had involvement of internal and common iliac arteries and the aorta. 29% had an isolated internal iliac aneurysm. Repair by either open procedure (n=42, 71%), endovascular procedure (n=12, 20%) or hybrid procedure (n=5, 8.5%) was performed on all patients. 30 day mortality was 19%. 8.3% after endovascular treatment, 21% after open surgery and 20% after a hybrid procedure.
Conclusion:

Internal iliac artery aneurysm ruptures are rare. As with RAAA most of the patients are male. Compared to operative RAAA mortality, RIIIA mortality seems to be somewhat lower with less than 20 % mortality at 30 days. The median size of the aneurysm at the time of rupture was 67 mm, compared to 76 mm in abdominal aortic aneurysms. Only one patient had a rupture at a diameter of less than 3 cm, which suggests that the threshold for elective treatment might be quite safely increased to 4 cm.
IBDs are here to stay
Internal Iliac Artery Aneurysm: A Current Review

Frank J Criado, MD, FACS, FSVM

“the threshold for elective treatment might be quite safely increased to 4cm”