

# Aortic Aneurysm Associated with Multiple Splanchnic Arterial Aneurysms and a Giant Coronary Artery Aneurysm: A Surgical Endeavour

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## ABOUT THE STUDY

Giant Coronary Artery Aneurysm (CAA) with concomitant aneurysms at multiple sites is quite unusual and rare. The characteristics and the etiology of this phenomenon are unknown. Aortic and splanchnic aneurysms were managed using endovascular techniques. Herein, we present a case with Left Anterior Descending (LAD) aneurysm with concomitant abdominal aorta as well as right renal artery aneurysm.

Currently, there are no general consensus regarding the clinical characteristics, diagnostic method and treatment of these cases.

### Case history

A 50 year old male patient presented with complaints of asthenia, loss of appetite and loss of weight since 8-9 months; associated with pain in abdomen on right side since 8 days. Clinical examination revealed pulsatile mass palpable in right lower quadrant of abdomen, approximately 10 cm × 8 cm in size. General physical examination revealed normal peripheral pulses, with impalpable arterial walls. There was no clinical evidence of peripheral vascular insufficiency. Cutaneous stigmata of vasculitis including digital ulceration and infarcts were absent. There was no evidence of Marfanoid features or joint hypermobility. Cardiac and abdominal examination was unremarkable. Neurological examination ruled out peripheral neuropathy. There was no evidence of any other swelling/bruit over the course of peripheral vessels.

### Diagnosis and clinical investigation

Lab investigations like complete blood counts, renal function tests were normal.

CT angiography was showing a fusiform aneurysm of right common iliac artery measuring 8 cm in its maximum diameter and 10 cm in length, involving internal iliac artery origin. There was a fusiform pararenal aortic aneurysm with maximum diameter of 5 cm associated with true aneurysms of common hepatic artery (2 cm × 1.5 cm) and another smaller aneurysm measuring 1.5 cm × 1.4 cm was also seen at the origin of the right renal artery. The inferior mesenteric and superior mesenteric artery appeared to be anatomically normal. Evaluation for underlying vasculitis including antinuclear and antineutrophil cytoplasmic antibodies was negative. Blood cultures performed in view of possible mycotic aneurysms were also persistently sterile.

## Treatment

Patient underwent physician modified Fenestrated Endovascular Aortic Repair (F-EVAR) (Left renal fenestration, right renal and SMA-chimney repair) and coil embolization of celiac artery and right internal iliac artery using homemade Teflon coils through bilateral CFA and brachial approach under general anesthesia in the year 2015. Hardware used was Zenith (Cook) aortic stent graft (28 mm), Advanta stents for the branches.

Subsequent diagnoses and management of events:

### One month later:

- C/O sudden onset pain abdomen for last 3-4 hrs
- Clinically, tenderness and guarding in epigastrium
- USG abdomen-Haemoperitoneum
- Both lower limbs warm, B/L DPA palpable

**CT angiography:** Previous aortic graft, right and left renal artery graft and SMA graft patent

- Large ruptured pseudoaneurysm from gastroduodenal artery
- Multiple small pseudoaneurysms seen from branches of SMA

**Procedure performed:** Coiling and glue embolisation of gastroduodenal artery pseudoaneurysm *via* transmesenteric (stent grafted SMA) route through left brachial artery approach

- 1 yr after EVAR-developed progressive disabling claudication left leg and thigh
- Currently could walk only 50 m
- O/e: All right lower limb pulses palpable, all pulses absent on left
- Clinically: Left Iliac Limb occlusion
- Plan: Angio and proceed
- 5 years later after EVAR-p/w chest and abdominal pain palpitations
- Investigations-2DECHO? Coronary artery Aneurysm
- CT Coronary-s/o Large LAD Aneurysm
- CT Angio-Abdomen-CHA Aneurysm
- Thoracotomy with ligation of LAD and excision of the aneurysm

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was done by cardiac surgery team.

- One month later
- Management of CHA Aneurysm-Endovascular
- PLAN: Coiling
- Approach: Left Brachial, LA

**Follow up:** Subsequent diagnosis of giant coronary artery aneurysm

Arterial aneurysms can present with a range of symptoms and complications, determined chiefly by their anatomical location. While peripheral arterial aneurysms typically present as palpable pulsatile masses, [1] visceral aneurysms can produce ischaemic symptoms through thrombosis and distal embolization [2] Coronary, intracranial and renal arterial aneurysms can respectively manifest as acute coronary syndromes, strokes and progressive renal insufficiency. Compression of the adjacent neural tissue by an expanding aneurysm can result in peripheral neuropathies [1]. Intra-abdominal aneurysms can also present with vague abdominal pain, as in this instance. Pain could either arise from direct pressure exerted on the surrounding pain-sensitive structures or as a result of thrombosis and embolisation producing tissue ischaemia. All arterial aneurysms also carry a risk of spontaneous or traumatic rupture with catastrophic bleeding. This presentation is especially common with visceral aneurysms and is seen in more than half of all cases [3,4]. Maintaining a high index of suspicion is critical for ensuring timely therapy in the form of open repair or percutaneous intervention, both of which are approved strategies [5-8].

## CONCLUSION

Coronary Artery Aneurysm (CAA) is currently defined as a coronary artery dilatation >1.5 times the diameter of the normal adjacent segments or the diameter of the patient's largest coronary vessel, and was reported to be 1% to 4% of coronary angiography findings. The reports of CAA combined with an additional aneurysm are quite common. However, CAA with concomitant aneurysms at multiple locations is quite unusual and rare, and is mostly limited to case reports and small case series.

## DECLARATION OF PATIENT CONSENT

The authors certify that they have obtained all appropriate patient consent

forms. In the form the patient(s) has/have given his/her/their consent for his/her/their clinical information to be reported in the journal. The patients understand that their names and initials will not be published and due efforts will be made to conceal their identity, but anonymity cannot be guaranteed.

## CONFLICTS OF INTEREST

There are no conflicts of interest.

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