

## Spontaneous Aortocaval Fistula Due to Ruptured Infrarenal Aortic Aneurysm

### Dear editor,

Aortocaval Fistula (ACF) is a rare condition of an Abdominal Aorta Aneurysm (AAA). ACF caused by perforation of atherosclerotic infrarenal aortic aneurysm into the adjacent IVC, iliac vein, or left renal vein.<sup>1</sup> Its incidence is approximately 1-2% which increases to 2-6.97% in the presence of ruptured AAA.<sup>2</sup> ACF is reported more in males (98%) with an average age of 64 years.<sup>3</sup> The common presentations of ACF includes a palpable abdominal mass, continuous bruit or thrill.<sup>2</sup> The early Diagnosis of ACF is very crucial due to the high mortality rate of approximately 30%.<sup>4</sup>

A 63-year-old man presented to Emergency Department with sudden left flank pain.

Abdominal physical examination revealed palpable mass, tenderness and self-guarding in left flank area without rebound tenderness. All peripheral pulses were present. Sonography of abdomen displayed infrarenal AAA with 63mm diameter. CT-images demonstrated infrarenal aortic aneurysm with fistula to IVC arising from aneurysm lumen that penetrated to retroaortic renal vein situated beneath the aneurysm (Figure).



**Fig.1:** Abdominal CT of the patient showing large infrarenal aortic aneurysm and fistula to IVC

At laparotomy No hematoma or active bleeding existed in peritoneal space. Followed by controlling blood flow of aneurysm neck, distal common iliac arteries were clamped. Therefore, renal veins became noticeable posterior the aorta. IVC was dilated excessively 4

cm and thrill was palpable on aneurysmal site. Further investigations revealed that exact site of fistula at the entrance of left renal vein to IVC. IVC was repaired and renal vein was ligated and aneurysm repaired using 20 tubular Dacron graft. There are several causes for ACF including spontaneous rupture of atherosclerotic aneurysm directly into adjacent IVC,<sup>5</sup> penetrating abdominal trauma,<sup>6</sup> iatrogenic trauma at the lumbar disc surgery,<sup>7</sup> mycotic aneurysm, and connective tissue disorders.<sup>5</sup> 80% of ACF cases are due to rupture of an aortic aneurysm.<sup>8</sup>

Early diagnosis of ACF prior to surgery is vital and also difficult due to rarity of complication and non-specificity of the signs and symptoms. Standard signs of ACF as a result of aneurysmal disease, include acute abdominal pain, hypotension, and pulsatile abdominal mass.<sup>9</sup> However standard signs were only represented by 50% of the patients.<sup>10</sup>

Specific treatment for ACF is operative transaortic closure of fistula and placement of prosthetic graft or endovascular repair of fistula.<sup>8</sup>

### Keywords:

### Conflict of interest:

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## References

1. Gourdin FW, Salam AA, Smith RB, 3rd, Perdue GD. Aortovenous fistulas due to ruptured infrarenal aortic aneurysms: experience with six cases. *South Med J*. 1982 Aug;75(8):913-6. [PMID: 7112194]
2. Albalate M, Gomez Octavio J, Llobregat R, Fuster JM. Acute renal failure due to aortocaval fistula. *Nephrol Dial Transplant*. 1998 May; 13 (5):1268-70. [PMID: 9623567]
3. Burke AM, Jamieson GG. Aortocaval fistula associated with ruptured aortic aneurysm. *Br J Surg*. 1983 Jul;70(7):431-3. [PMID:6871627]
4. Alexander JJ, Imbembo AL. Aorta-vena cava fistula. *Surgery*. 1989 Jan; 105(1):1-12. [PMID:2643193]
5. Farid A, Sullivan TM. Aortocaval fistula in ruptured inflammatory abdominal aortic aneurysm. A report of two cases and literature review. *J Cardiovasc Surg (Torino)*. 1996 Dec;37(6):561-5.[PMID:9016967]
6. Porhomayon J, Hassan MA, Perala PR, Nader ND. Anesthetic management of aortocaval fistula repair associated with aortic valve replacement, severe aortic regurgitation, and bacterial endocarditis. *J Anesth*. 2011 Apr;25(2):263-6.[PMID:21409354]
7. Lanne T, Bergqvist D. Aortocaval fistulas associated with ruptured abdominal aortic aneurysms. *Eur J Surg*. 1992 Sep; 158 (9):457-65. [PMID:1358211]
8. Arruche Herrero M, Ruiz Garcia V, Castillo Escudero AI, Gomez Miranda C, Rodriguez Espinosa N, Villavicencio Lujan C, Martinez Veja A. Acute renal failure as a presentation of an aortocaval fistula associated with abdominal aortic aneurism. *Nefrologia*. 2011; 31(1): 124-6. [PMID: 21270933]
9. Delaney CP, Brady MP. Ruptured aortic aneurysm with aortocaval fistula. *J R Soc Med*. 1998 Dec; 91 (12):645-6. [PMID: 10730117]
10. Reckless JP, McColl I, Taylor GW. Aorto-caval fistulae: an uncommon complication of abdominal aortic aneurysms. *Br J Surg*. 1972 Jun;59(6):461-2.[PMID:5031192]