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Randecker's Fossa

Harold Randecker

12124 Smokes Road, Arlington, WA 98223, USA

Correspondence should be addressed to Harold Randecker, hrandecker@earthlink.net

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INTRODUCTION

I have previously submitted a research paper, peer reviewed and published, entitled "0% Mortality Twenty Days Post-Operatively After Open Surgical Repair of Ruptured Abdominal Aortic Aneurysms" [1]. In this paper, I described an anatomic feature which facilitated and allowed the cross clamping of the ruptured abdominal aortic aneurysm at its anatomic "neck" or inlet to within 1 to 1½ cm of the aneurysm wall. Being this close to the aneurysm stops the deleterious effects of cross clamping higher as discussed in great detail in the above referenced research paper. This discovery is a major contributor to the 0% mortality.

DESCRIPTION

This feature is a fossa formed under the anatomic neck of the inlet to the aneurysm. The fossa is believed to be formed by the anteriorly directed growth of the posterior wall of the aneurysm at the junction of the proximal aorta with the aneurysm. This process lifts 3 cm to 4 cm of the aorta proximal to the inlet the aortic aneurysm off of the anterior lumbar/distal thoracic vertebral fascia for a distance of 2 cm to 3 cm. As this process occurs slowly with the growth in size of the aneurysm, the attached lumbar/thoracic arteries for each vertebral segment elongate. If there is an aberrant branch feeding the anterior spinal artery, it also elongates.

This process allows the formation of an anterior –posterior diameter of 2 cm to 4 cm. The end result is a fossa measuring 3 cm to 5 cm long, 2 cm to 4 cm high, and 3 cm to 4.5 cm wide (diameter of inlet abdominal aorta at this point).

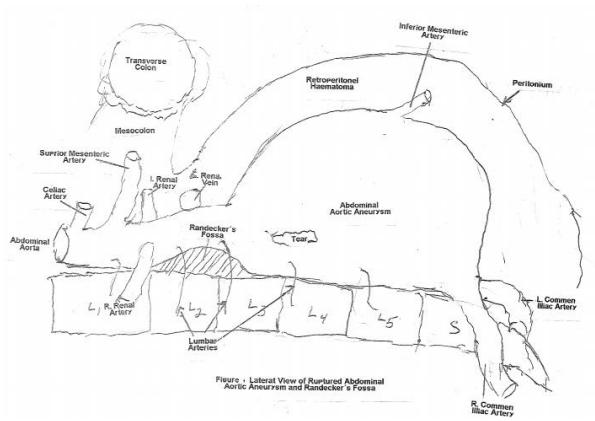

Figure 1: Lateral view of ruptured abdominal aortic aneurysm and Randecker's Fossa.

METHOD

This fossa was discovered only during the performance of open surgery on live patients with elective repair of their abdominal aortic aneurysms. With enough experience, it was found also in the ruptured abdominal aortic aneurysm patients. It can be easily accessed under 6 inches of free-flowing blood once its location is fixed in the surgeon's "mind's eye". When this must be done by touch without visualization, it is accessed as follows. The surgeon's

Citation: Harold Randecker, Randecker's Fossa. Clin Surg J 4(S12): 12-13.

right hand locates the dome of the abdominal aortic aneurysm after eviscerating the bowel. The retroperitoneum is opened and the aneurysm wall is found. The dome wall of the aneurysm is followed with finger dissection cephalad until it drops to the aortic inlet of the aneurysm ("neck"). Care must be taken not to severe the left renal vein and other vascular structures but to pass between it and the aneurysm wall. Once the aneurysm neck is reached, a palpable aortic pulse will be found. It will be very weak in ruptured abdominal aneurysms but will be wide.

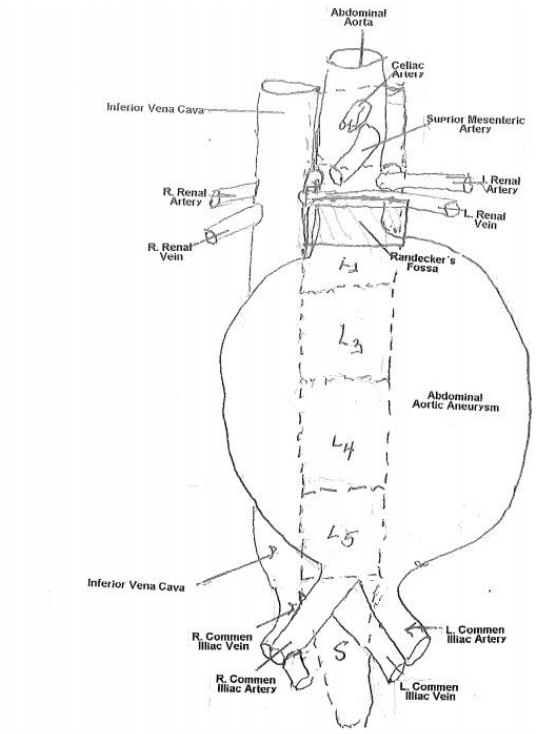

Figure 2: Anterior view of ruptured abdominal aortic aneurysm and Randecker's fossa.

Finger dissection is carried down the left side of the patient's aorta until the anterior vertebral column is reached. At this point the fossa is opened by hooking the index finger under the aorta (aneurysm neck). Thin wire like bands will extend across the fossa. These are lumbar arteries and/or a branch of the anterior spinal artery and must not be torn or cut. Passing under the aorta to the patient's right side leads to encountering the inferior vena a and a plane can be developed easily if the surgeon's finger stays tightly on the aortic adventitia. The surgical neck of the aneurysm of the ruptured aneurysm is encircled with the surgeon's finger. If the plane cannot be developed, cross clamping the aorta at this level will be very successful using the correct vascular clamp. Finger clamping to buy time for the cell saver to process shed blood and for the anesthesiologist to stabilize blood pressure and other vital signs can be done. Finding the fossa easily in this manner comes with locating it 2 or 3 elective cases.

It is difficult to find this in alcohol or formaldehyde fixed cadavers but should be easy to find in a fresh cadaver which would fix its position in the surgeon's mind.

RESULTS

Using this method, the fossa has been accessed 100% of the time in 20 cases

DISSCUSSION

Because I have found no prior mention of this fossa in the surgical and anatomic literature, and since no one has added their name to this anatomic area as far as I can tell, I will now lay claim to this anatomic area with my name.

CONCLUSION

Randecker's Fossa physical anatomical description and its major usage have been enunciated.

REFERENCES

1. Randecker H (2019) 0% Mortality in the First twenty days post operatively after open surgical repair of ruptured abdominal aortic aneurysms. Annals of Thoracic Surgical Research 1(1): 1001.