

Persistence
& Creativity

Anatomy Comics, Objective 14.2



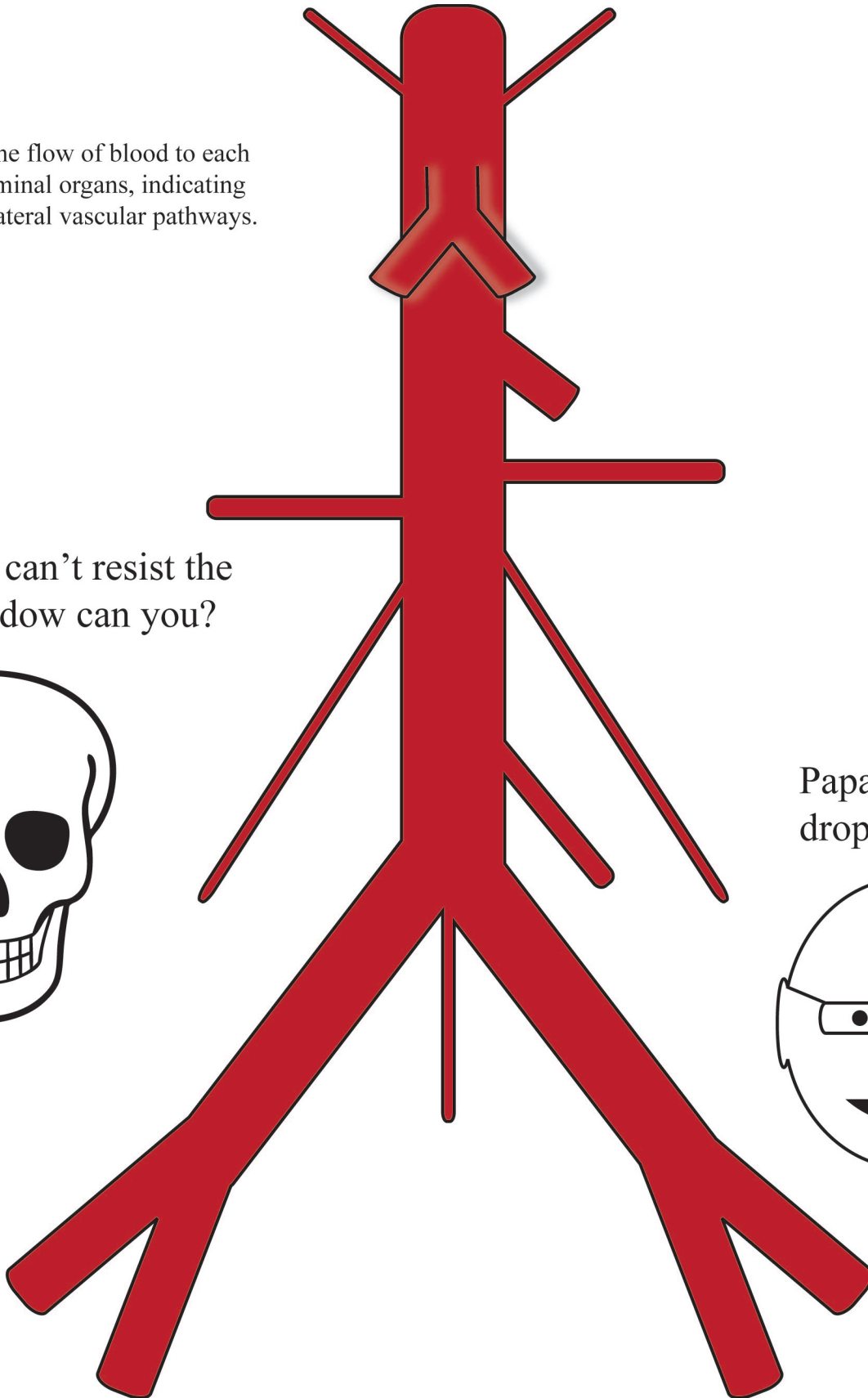
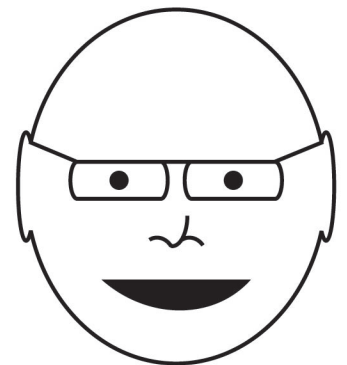
Simple
Comix

14.2 Trace the flow of blood to each of the abdominal organs, indicating possible collateral vascular pathways.

You just can't resist the drop shadow can you?

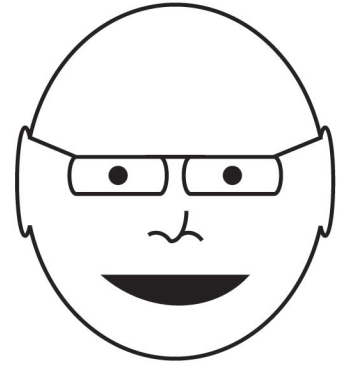


Papa likee the drop shadow!!



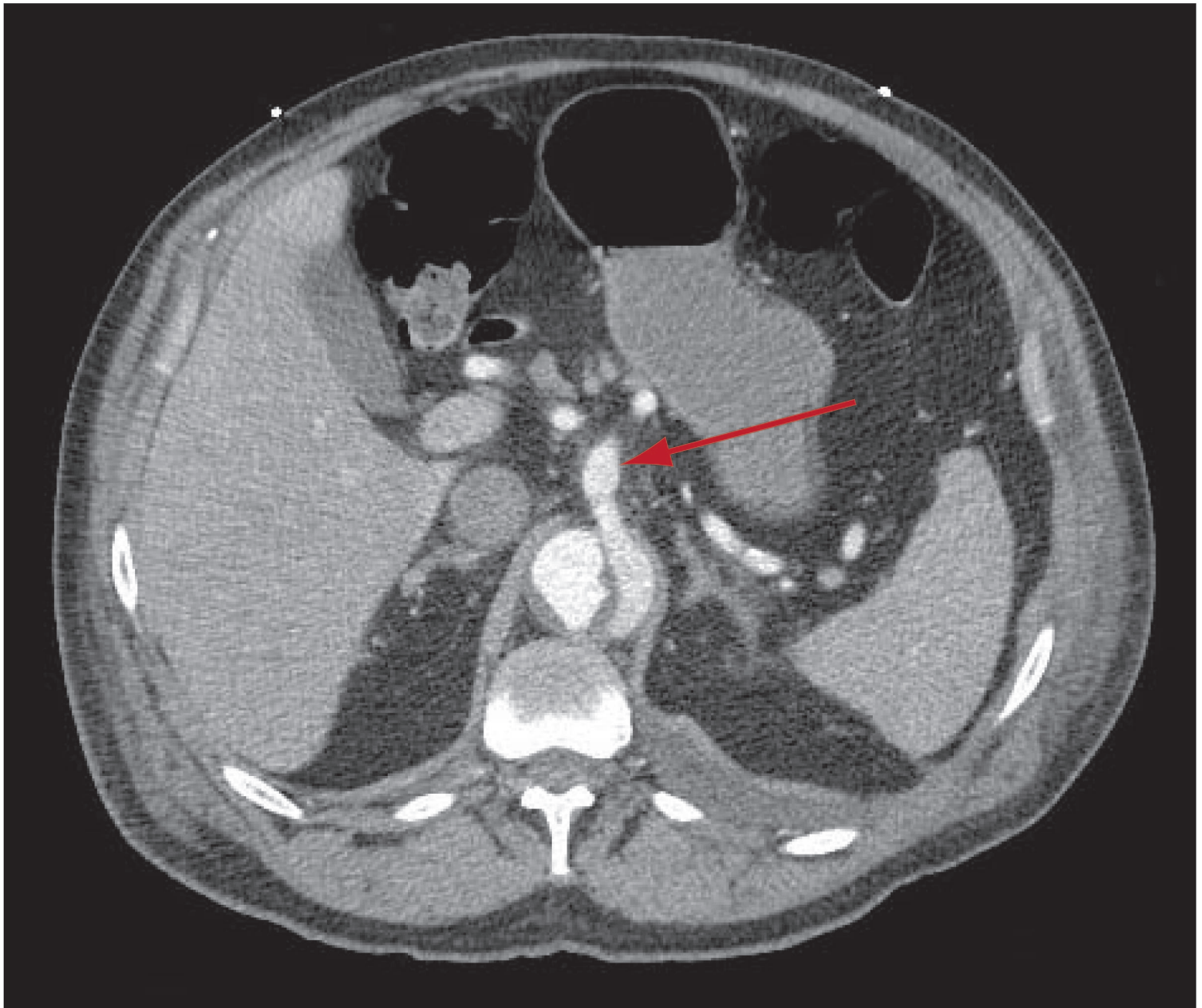
1. A 50 year old man presents with abdominal pain and undergoes CT angiography. Name the arrowed vessel.

- A. Hepatic artery
- B. Gastric artery
- C. Celiac artery
- D. Splenic artery

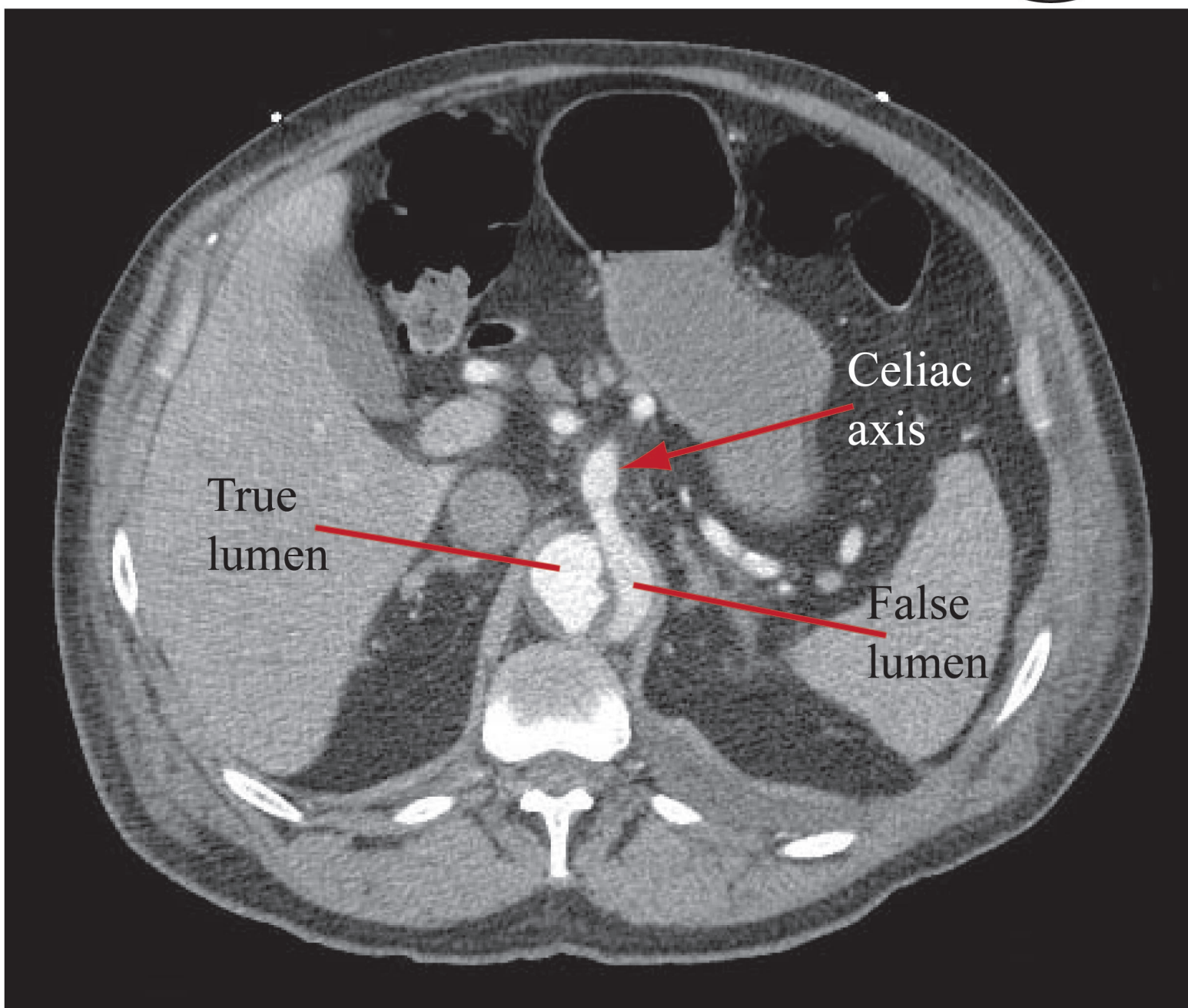
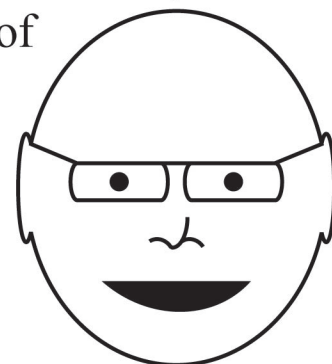


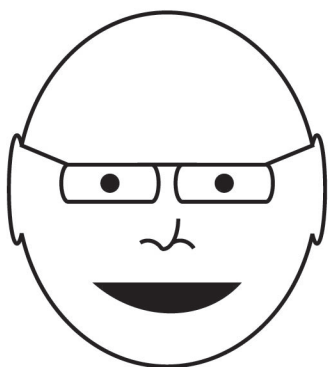
2. What life threatening aortic abnormality is present?

- A. Aortitis
- B. Rupture
- C. Aneurysm
- D. Dissection

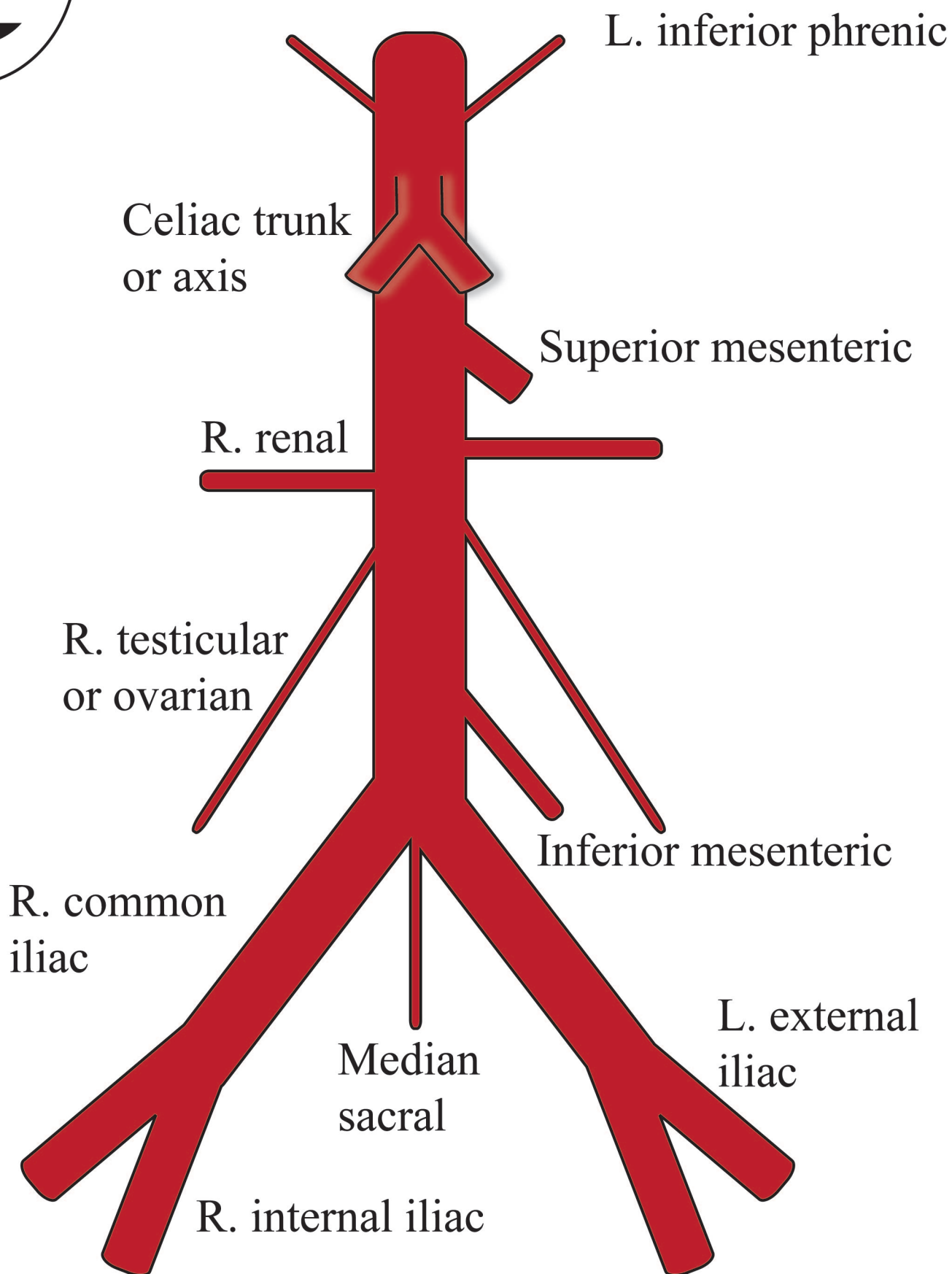


The answer to the first question is C, the celiac axis. This has to be the answer because it is the only choice that arises directly from the aorta. We'll look at some of the other branches later on. The answer to the second question is D, the patient has a dissection. Remember, a dissection occurs when the innermost layer of the aorta, the intima, tears with bleeding into the next layer, the media. The tear results in a true lumen (the normal lumen) and a false lumen (the blood filled media), which have been labelled below. The best way of telling the true from the false lumen is to see which lumen arises from the normal aorta. To do that, you need the entire data set, which we can look at in lab. If you don't have the entire image sequence, usually the false lumen is bigger, but the contrast bolus is less dense because of slower blood flow.

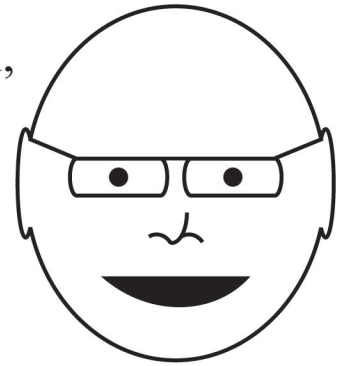




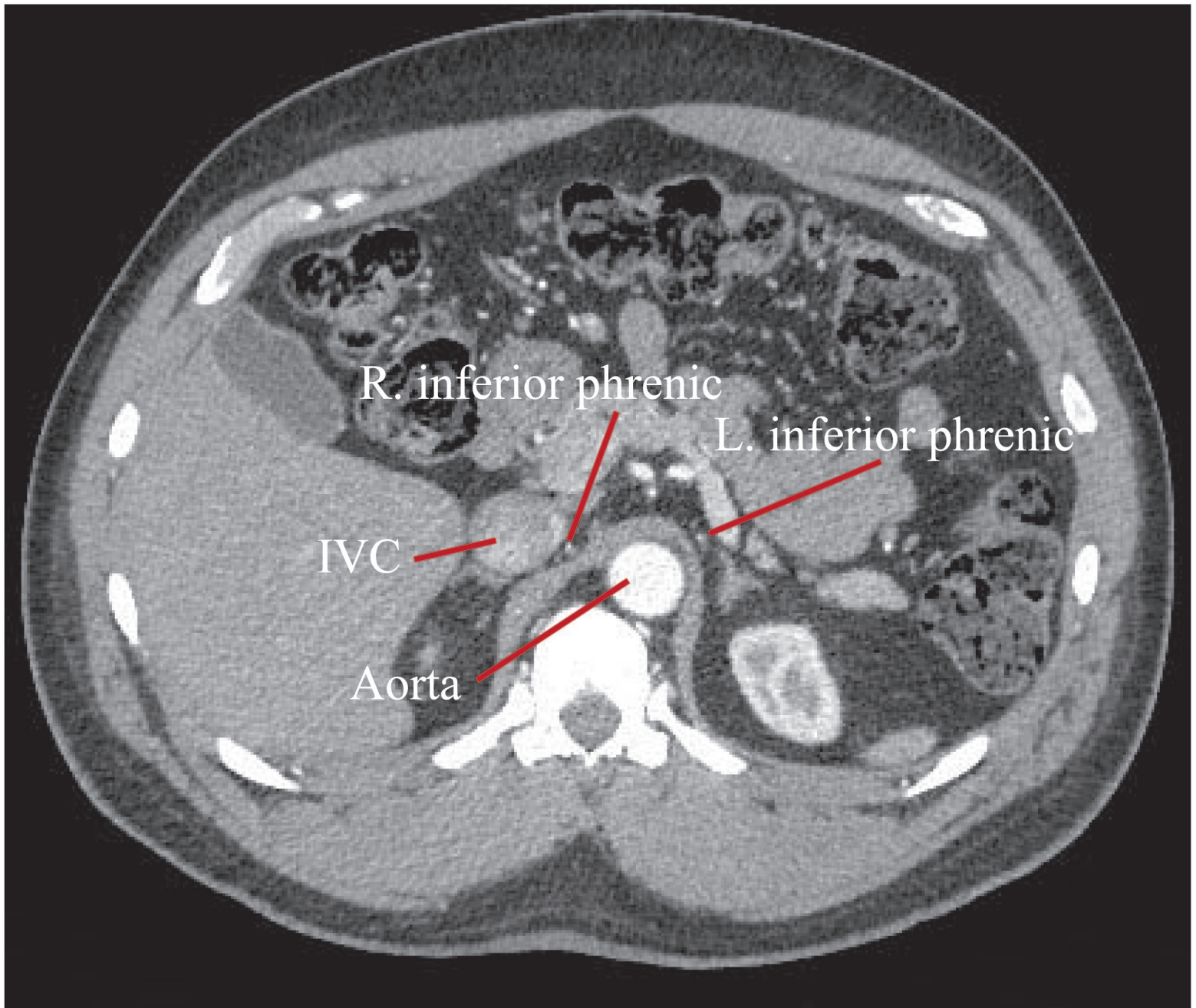
Let's use this drawing of the abdominal aorta to introduce the anatomy. We'll explore some of these arteries in detail, but we won't cover all of them now.



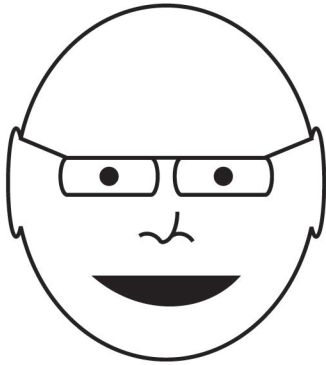
The visible human images from both the male and female subjects don't show the abdominal aorta or its branches well, so we will have to rely on medical imaging.



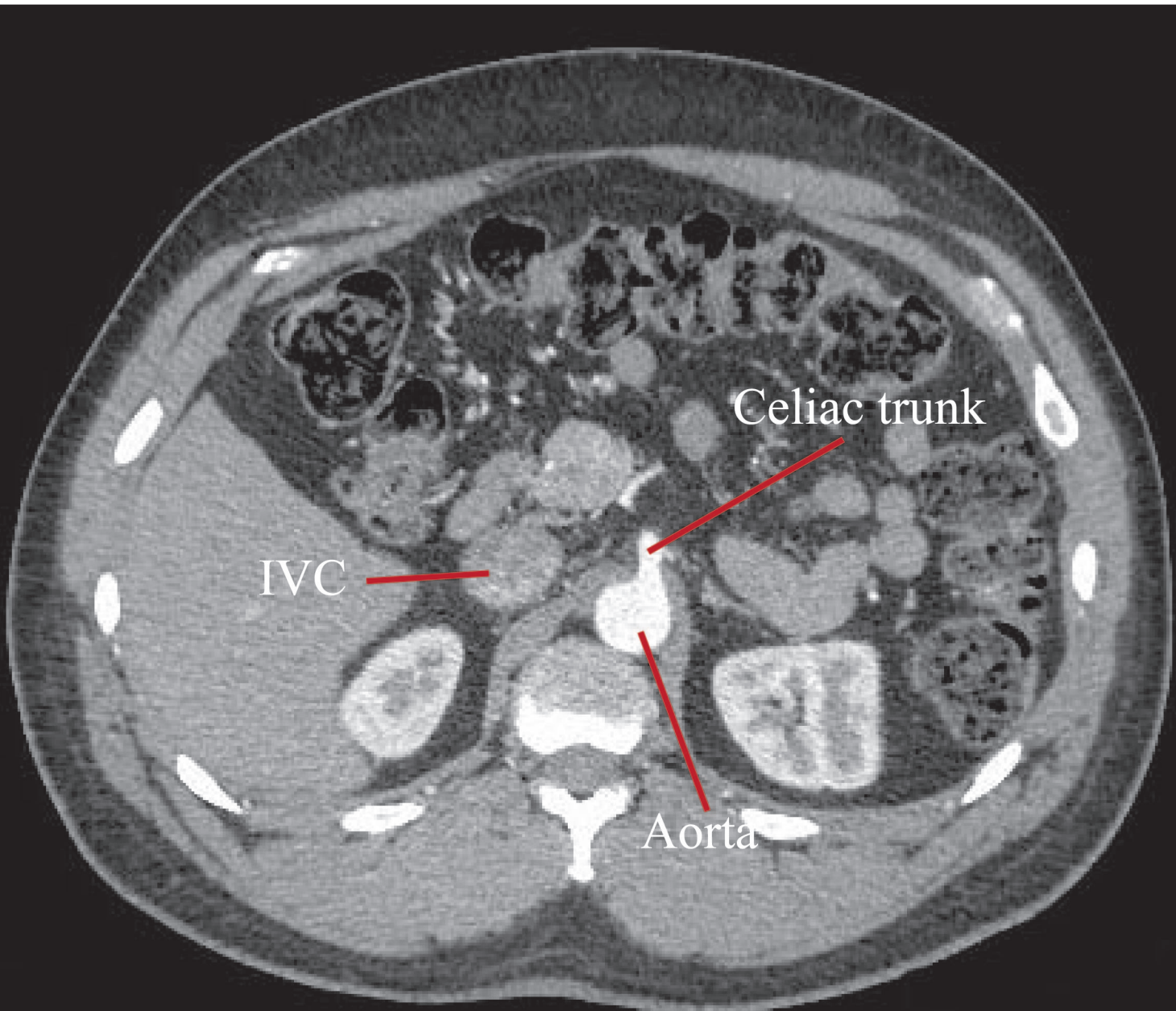
Those inferior phrenic arteries are really small!

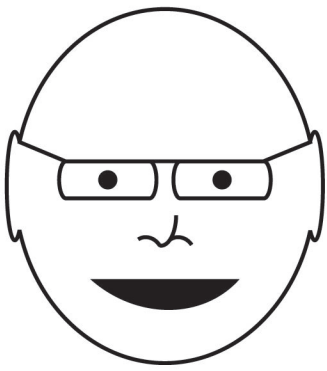


The first really big vessel that arises from the abdominal aorta is the celiac trunk.



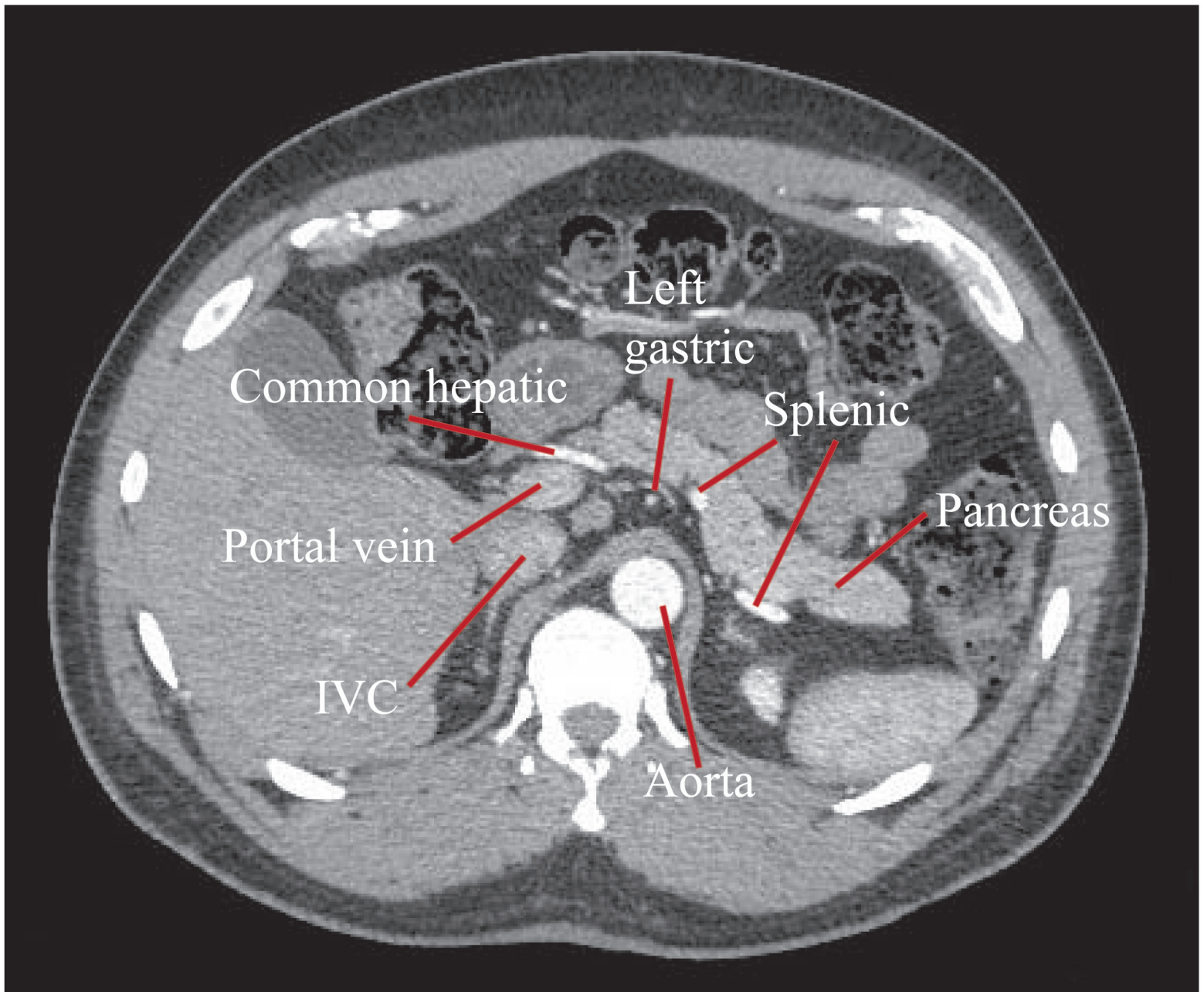
There are 3 big branches that arise from the celiac trunk that we will look at in the next panel.





The three major branches of the celiac trunk from right to left are the common hepatic artery, the left gastric artery and the splenic artery.

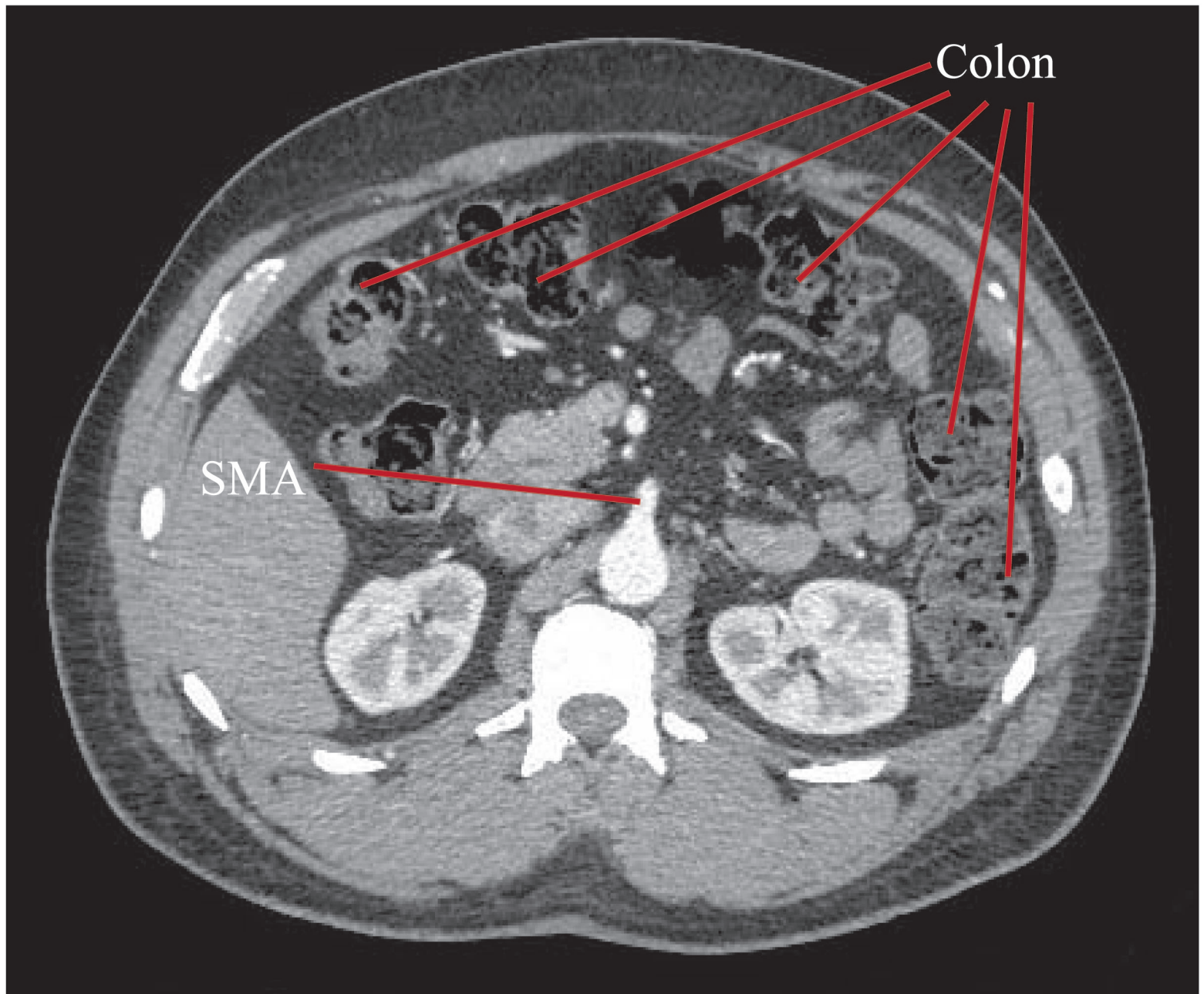
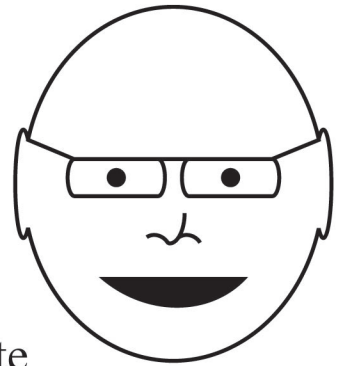
There aren't 2 splenic arteries, it just gets a little wiggly as it runs behind the pancreas, so the section may include 2 or more seemingly separate vessels that in reality are continuous.



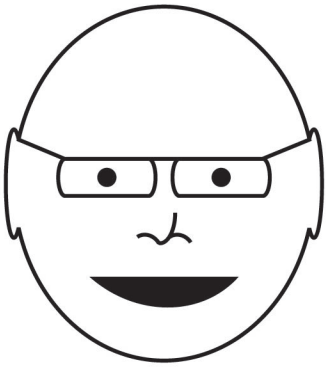


The next large branch of the abdominal aorta is the superior mesenteric artery (SMA).

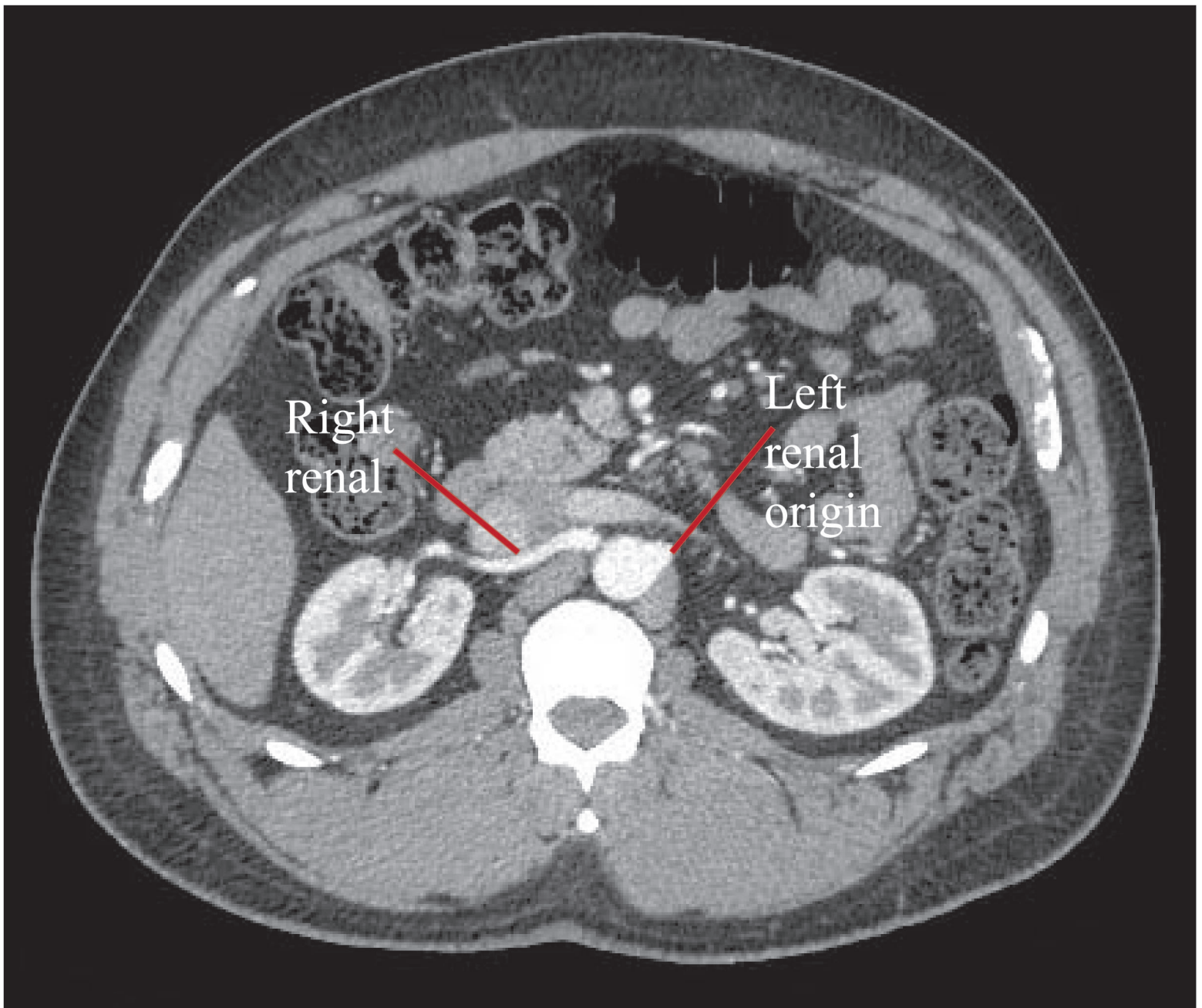
The celiac trunk supplies the foregut while the SMA supplies the hindgut
The bowel in the center of the abdomen is small bowel and all of those little white dots are branches of the SMA supplying small bowel.

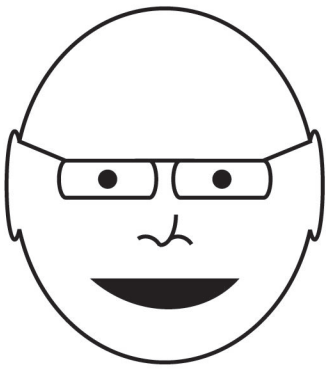


Next we have paired right and left renal arteries.



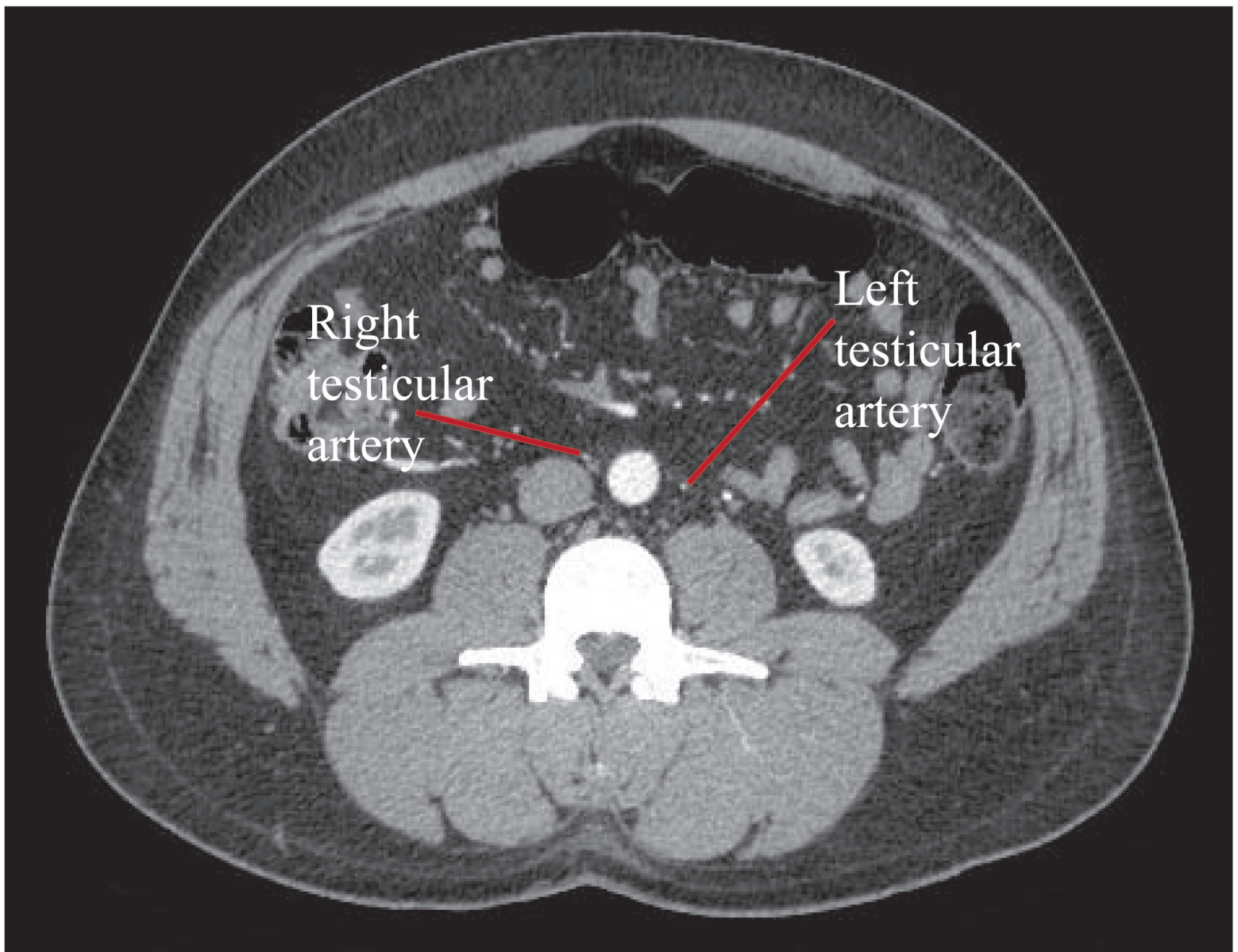
The right renal is visible just distal to its origin, you can see almost the entire length of the vessel. Only the origin of the left renal is visible on this image.

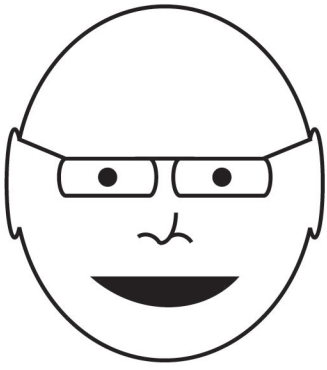




The gonadal, in this case testicular, arteries arise in the abdomen, but follow their target organs in the pelvis or scrotum. We'll be able to follow them in lab when we have access to the complete data set.

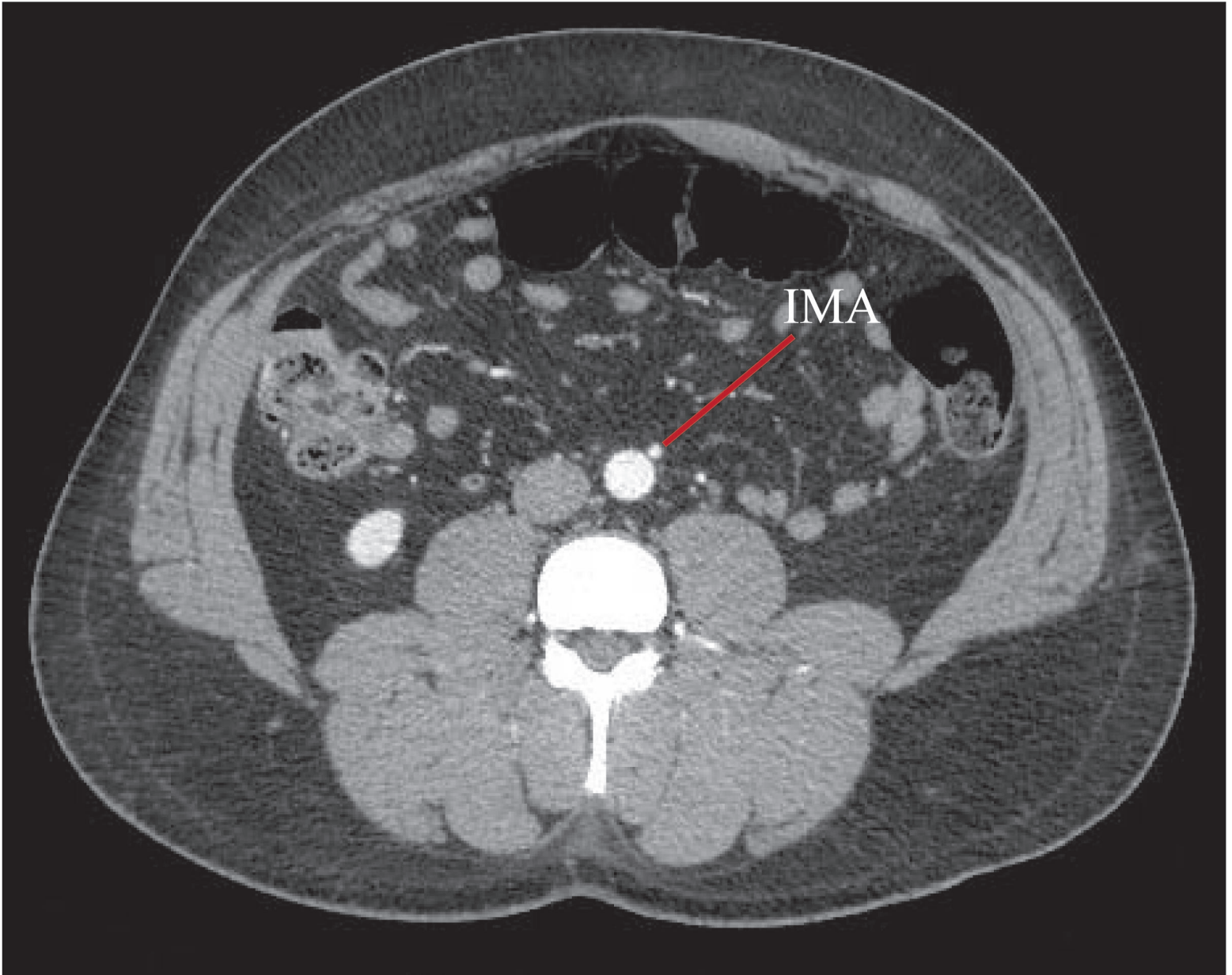
Cool.

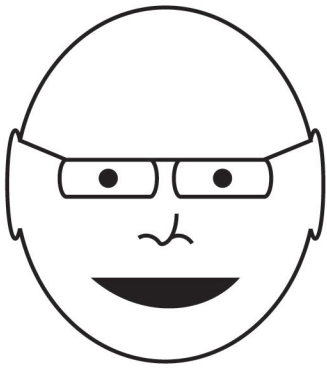




Next, we have the inferior mesenteric artery (IMA) that supplies the hindgut.

It is a much smaller vessel than the celiac and SMA.





Let's stop here at the bifurcation of the aorta into the common iliac arteries.

Right, we'll pick up the pelvic vasculature in the next thrilling installment of Anatomy Comics!

