

Two Filter, or Not Two Filter: Rare Anatomical Variant of Inferior Vena Cava

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INTRODUCTION

The IVC has many known anatomical variations given its multiple primitive veins that create it embryologically (as shown in the figure below). The prevalence of a duplicated IVC (DIVC) is rather rare with a range of 0.2% to 3.0%. DIVC could be under reported as they are clinically silent and usually only discovered incidentally, as is the case in this patient.

Filter placement in DIVC has multiple options, such as; bilateral infrarenal, bilateral suprarenal, or embolization of the intervenous segment with right sided filter placement. All of which depend on patients particular anatomy.

CASE PRESENTATION

68 year old male with history of hypertension, hyperlipidemia, and recently diagnosed pulmonary embolism, presented as a transfer from rural outside facility with dropping hemoglobin and dark tarry stools, seeking higher level of care with GI coverage. Three weeks prior to admission he was diagnosed with a PE with small clot burden. He was started on Eliquis, which he had been on before again for a PE in his distant history. He received an EGD which showed ulcerative esophagitis. Eliquis was restarted resulting in continued dropping of hemoglobin. Interventional radiology was consulted at that time for placement of an IVC filter.

During the procedure, the right common femoral was accessed and during the venogram patient was noted to have a duplicated IVC. Decision was made to place bilateral Denali filters infrarenally via the right and left common femoral approach respectively. He tolerated procedure well and was discharged with follow up EGD and plans to attempt to remove the filters in the future. The left filter may be difficult to retrieve in the future due to the logistics on his anatomy, which was discussed with the patient prior to the procedure and he was willing to continue pursuit of filter placement.

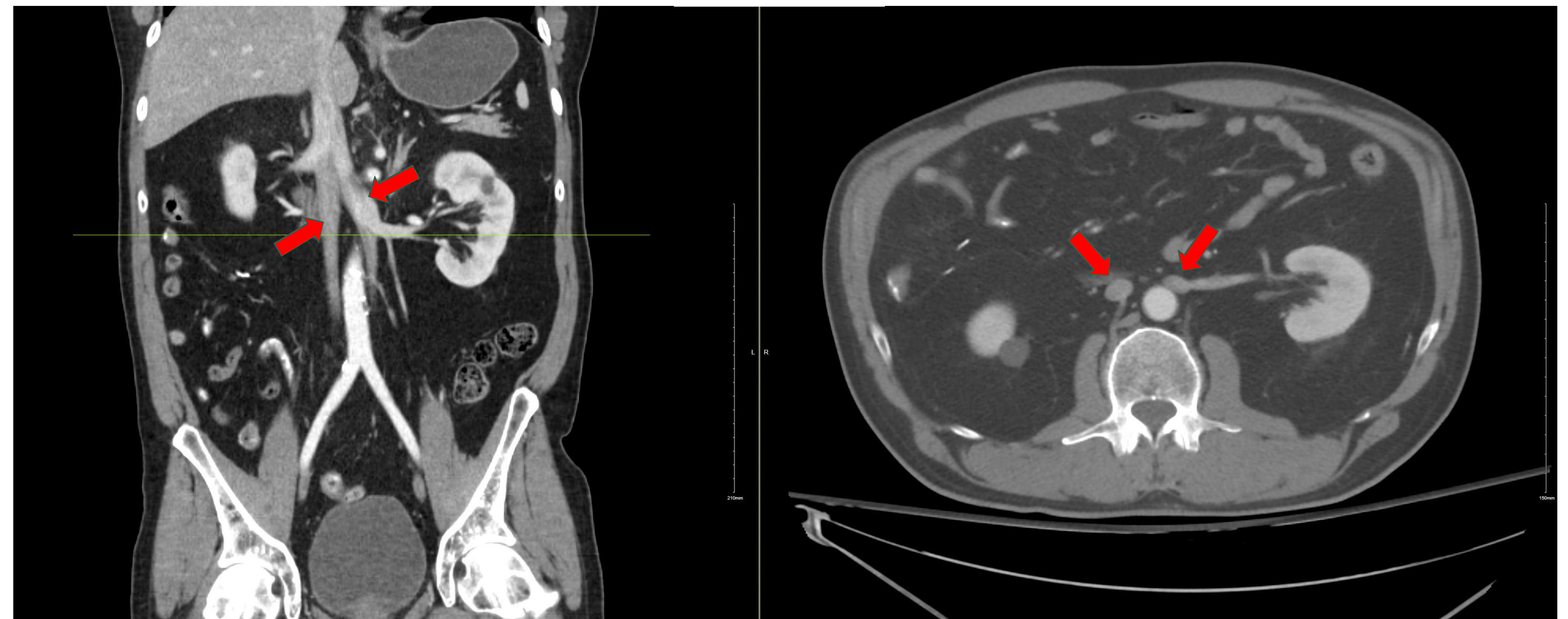
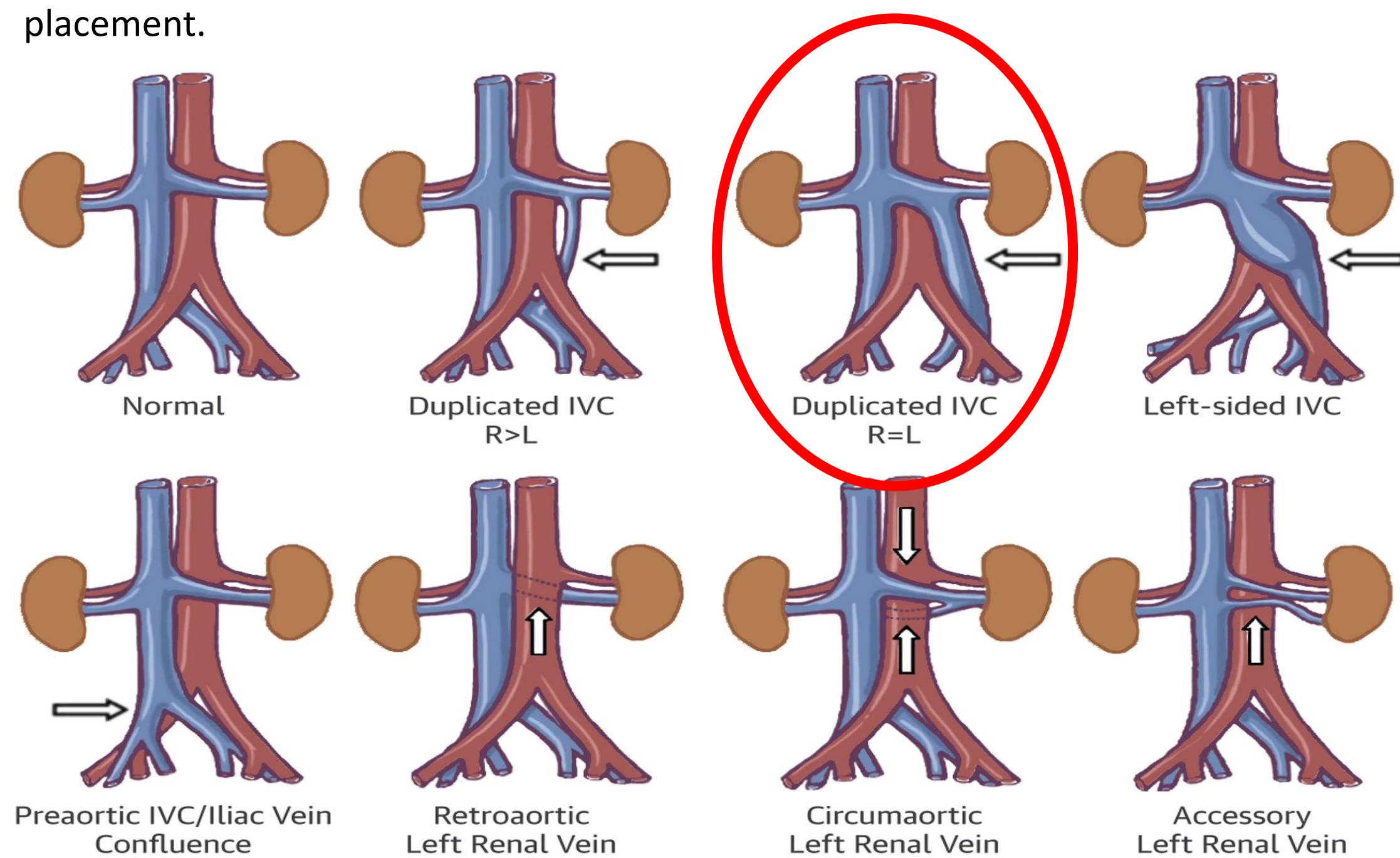


Figure 1: CT Abdomen from several years prior showing the duplicated IVC's at the level of the left renal vein just prior to rejoining back to the common IVC. This was not mentioned on radiologic read.

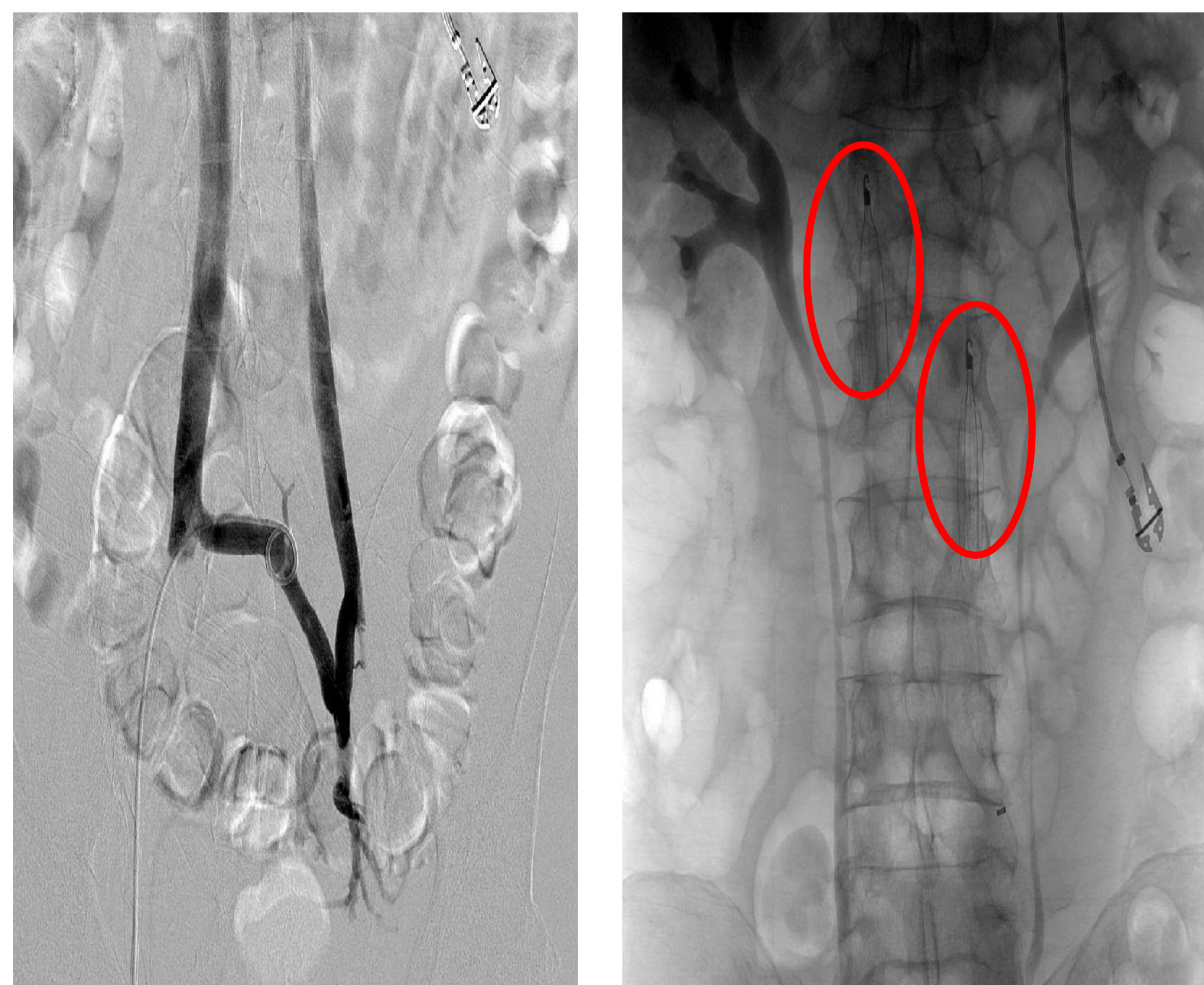


Figure 2: Venogram upon first discovering the presence of duplicated IVC prior to placement of Denali filter

Figure 3: Imaging status post bilateral infrarenal filter placement.

DISCUSSION

The literature on the topic of placement of IVC filters in these anatomic variants is scarce, likely due to them only being discovered incidentally. Only 16 cases of duplicated IVC filter placement on PubMed using the terms "duplicated IVC" AND "IVC filter". This case shows effectiveness of bilateral infrarenal placement as a solution.

REFERENCES

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