Floating Aorta Sign

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A 42 year old woman presented with increasing abdominal pain and intermittent fever for two months. She also had loss of weight of 17 kg in last four months. Examination revealed pallor, hepatosplenomegaly, tender para-aortic masses and mild pedal edema. Contrast enhanced CT scan of abdomen showed large conglomerated soft tissue masses in the retroperitoneum. These masses had pushed the abdominal aorta anteriorly (Figure 1) by around 2 cm from the anterior end of the lumbar vertebra. Biopsy from the masses revealed non-Hodgkin’s lymphoma of large cell type. Thus, the lymphoma nodes had displaced the aorta. This is called the “floating aorta sign”. Immunohistochemistry revealed the cells to be of B cell type (CD20+, Bcl-2+ve). The woman was then transferred to oncology ward for therapy.

The posterior wall of the abdominal aorta normally lies <7.3 mm from the anterior end of the vertebra in women. Any mass or soft tissue structure insinuating between the aorta and the spine will displace the vessel anteriorly, giving rise to this sign. In our patient, the aorta was displaced by 14-20 mm anteriorly from the vertebrae at different levels. The sign is characteristically described for lymphoma. Lymphoma nodes do not compress the vascular structures, but rather displace them.¹ This is also known as CT angiogram sign.² This sign can be demonstrated in high-resolution ultrasonography too but the best imaging modalities for demonstrating it are CT and/or MRI scans.²

Presence of the Floating Aorta sign most commonly suggests a diagnosis of lymphoma.² Rarely, the sign may be mimicked by other diseases with extensive lymph nodes or retroperitoneal masses like Castleman’s disease, metastatic testicular neoplasm or infectious adenitis.² However, these latter diagnoses can be differentiated from lymphoma by other radiological characteristics. For example, Castleman’s disease lymph nodes take up intravenous contrast more avidly than lymphoma.² Infectious lymph nodes are not so big. Malignant lymph nodes show central necrosis. The essential requirement for giving rise to the floating aorta sign is that the lymph nodes should surround the aorta but not invade it.³

We present this case to highlight this radiological feature as it leads to quick diagnosis.

References


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