基本事实：

纤维瘤是良性平滑肌肿瘤，子宫常见肿瘤。非常罕见的情况下，它们显示出不寻常的生长模式，如血管内侵袭（IVL）1。IVL的诊断往往被忽视2。它们以侵入血管的方式生长，通常没有侵犯血管壁。当接触到静脉血时，它们可能到达下腔静脉，右心房或肺动脉4。这种情况非常罕见。血管内侵袭的纤维瘤被认为是由于其粘弹性特性和透明质酸成分，在病理过程期间促进侵袭5。CT扫描在诊断血管内纤维瘤中起关键作用，因为它可以很容易地确定精确的位置、范围并为手术提供路线图。

案例报告

我们的患者是一位50岁的女性，有几周的呼吸困难，腹痛和超声心动图右房室壁增厚的征兆。她接受了128-层多层螺旋CT（MDCT）扫描，以了解胸腹腔情况。在CT图像中，子宫明显增大，被多个轮廓破坏的纤维瘤取代，侵犯右侧卵巢血管，延伸至右侧卵巢静脉、下腔静脉（IVC）和右心房。这些发现被手术确认。手术也证实了进一步延伸到右心室和肺动脉，即肺动脉纤维瘤栓塞。组织学发现与血管内纤维瘤一致。MDCT图像在术前对IVL的形态学评估中起着决定性的作用。

关键词：多层螺旋CT，血管内纤维瘤，纤维瘤
There was a complex density right adnexal mass with abnormal flow like tortuous vessels in right para uterine region. Due to her long time complaint of abdominal pain, her imaging was done by multidetector CT scan. MDCT was performed on 128 slicer Toshiba scanner and images were assessed on vitrea workstation. Uterus was enlarged and replaced by multiple fibroids. These fibroids were abutting and involving the right adnexa. There were multiple tortuous collateral vessels along right ovarian vessels, some with arteriovenous shunting. Multiple filling defects were seen in right ovarian vein and IVC. CT chest sections revealed serpiginous heterogeneous densities in right atrium and right ventricle of heart (Figures 1). Images were reconstructed in multiple planes and 3D images were reconstructed using CT vessel selection tool (Figure 2), which clearly demonstrated connection between the uterine fibroids, all the intravascular filling defects (in right gonadal vein & IVC) and heterogeneous densities in right cardiac chambers. The case was assessed and discussed in intra-departmental consultation conference by a team of qualified consultant radiologists. The filling defects in right gonadal vein and IVC were definitely representing thrombi. But close proximity of these probably thrombosed vessels with uterine fibroids and loss of intervening fats were raising strong suspicion of intravascular leiomyomatosis, which is a very rare entity. These findings were suggesting extension of fibroids into the right gonadal vein and through it into the inferior vena cava and right cardiac chambers. Therefore, the diagnosis of leiomyomas with intravascular and intra-cardiac extension was made. Our patient underwent one stage combined multi-disciplinary treatment including departments of gynecology and cardiovascular surgery. Thoraco-abdominal surgery was done. Pelvic uterine fibroids were excised by gynecological team. Cardiovascular team removed the intravascular tumor. The intravascular tumor / fibroids were almost 25 cm long. The surgical opinion was that fibroids within vessels and heart had well-demarcated borders with the vascular walls and heart. Subsequently the pathologic report also confirmed IVL.

**DISCUSSION**

Intravascular leiomyomatosis (IVL) is benign smooth muscle tumor within vessels, from intrauterine to the systemic veins. Fewer than 200 cases of IVL have been reported worldwide. Only 14 cases involved intracardiac extension from the IVC. Only a few scattered case reports of IVL exist in the radiology literature. Extra uterine involvement of fibroids occurs in approximately 30% of cases and intracardiac extension accounts for about 10%. Although the pathogenesis remains unclear; one theory suggested that leiomyomas originate from the vessel wall whereas according to another
theory, the uterine fibroids invaded into the uterine vein\(^\text{13}\), which is similar to our case. In our case, there was evidence of uterine leiomyoma invading into the vessels shown by the classic features of CT imaging findings. So far, 90% of reported cases of intravascular fibroid extension have occurred in parous females and 10% had previous pelvic surgery or hysterectomy\(^\text{14}\). Incomplete hysterectomy may cause intravascular extension of fibroids\(^\text{15}\), or alternatively, sometimes the leiomyomas may arise from the smooth muscles of vessel wall\(^\text{16}\). Our patient had a normal pregnancy and was delivered four years earlier via cesarean section. Leiomyomas might invade the uterine or ovarian veins, and can progress into the IVC and right heart\(^\text{16}\). Case of uterine fibroids extending into the heart was seen similar to our case originating from huge leiomyoma in the pelvis and extending into the ovarian vein, the IVC, the right atrium, the right ventricle and the pulmonary artery\(^\text{7}\). Contrast CT plays an instrumental role in diagnosing intravascular leiomyomatosis. MDCT acts as a road map for surgeons especially if done with proper angiography protocol. Recent literature has recommended that diagnosis of intravascular leiomyomas should be considered in females with history of pelvic surgery, partial hysterectomy or uterine fibroids, who present with nonspecific abdominal symptoms or with deep vein thrombosis and CT scan showing a uterine mass with tumor thrombus in IVC or even the right atrium of heart\(^\text{17}\).

**CONCLUSION**

Fibroids going into the heart via vascular invasion or intravascular leiomyomatosis (IVL) should be considered in patients with a history of uterine fibroids or a pelvic mass accompanied by right atrial tumor.

128 slice MDCT with its high resolution and multi-
planar imaging plays an instrumental role in diagnosing intravascular extensions of uterine fibroids and provides a road map for surgeons to plan treatment and tumour resection.

REFERENCES


