Case Report

Cavernous hemangioma of uterus – Report of two cases and review of literature

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ABSTRACT

Uterine hemangioma is a rare benign tumor and can be congenital or acquired. Acquired is associated with physical changes such as tissue injury, hypoxia, endometrial curettage, increased blood volume during pregnancy and hormonal alterations. Uterine hemangiomas are found incidentally, remain asymptomatic and may present with bleeding per vaginum. Only 73 cases of uterine, cervical, vaginal and fallopian tube hemangiomas are described in the literature. In this report we describe additional two cases of uterine hemangioma.

Key words: Cervix, Hemangioma, Uterus.

INTRODUCTION

Vascular malformation of the uterus and cervix is uncommon and usually presents with menorrhagia, intermenstrual bleeding, infertility and pregnancy associated complications, such as maternal and fetal demise due to excessive bleeding.[1-4] Congenital hemangiomas in uterus are associated with hereditary disorders including hereditary hemorrhagic telangiectasia, Klippel-Trenaunay syndrome, tuberous sclerosis, Maffucci syndrome, Blue rubber bleb nevus syndrome and Kasabach-Merritt syndrome. Acquired hemagiomas are associated with tissue injury, hypoxia, endometrial curettage, increased blood volume during pregnancy and hormonal alterations such as menarche, pregnancy, trophoblastic disease, endometrial carcinoma and maternal ingestion of diethylstilbestrol.[2] Only 73 cases of uterine and cervical hemangiomas are described in English literature. In this report we describe additional two cases of uterine hemangioma and review of literature.

CASE HISTORY

Case 1: A 40-year-old female, (G6P3L3A3) had menarche at the age of 14 year. At the age of 19 year, she conceived but she started bleeding at 10th week and MTP was done. Subsequently, she became pregnant for second time and after 10 week of gestation, had spotting for which she was treated with hormonal medication and she delivered normally. She had two more pregnancies and delivered normally. She conceived for 2 more times and undergone MTP. After the last pregnancy she had undergone tubal ligation. She presented with excessive bleeding since 12 year for which she was on combined OC pills. Ultrasonography (USG) findings showed bulky uterus with two small subserosal fibroid in anterior uterine wall, largest measuring 18x15 mm in size. Hysteroscopy findings showed endometrial proliferation all around cavity. All other haematological, biochemical, microbiological and coagulation test results were unremarkable. Her hysterectomy was performed, and specimen of uterus was received for histopathological examination. The serosal surface of uterus had slightly bluish tinge, on cut surface the

outer one third of myometrium had blackish brownish appearance and showed sieve like spaces (Figure1A). Magnetic resonance imaging (MRI) of specimen was done, it showed few tiny cystic areas in outer myometrium which are suggestive of hemangioma. Microscopic examination of uterus showed proliferation of cavernous vascular spaces lined by endothelial cells. These spaces were filled with blood. (Figure 1B)

Case 2: 37-year female, (G4P4L4A0) presented with excessive bleeding and passage of blood clots since 6 month. Her age at menarche was 15 year and had regular menstruation but lastly for 8 to 10 days with heavy bleeding. Currently she presented with irregular menses and abdominal pain since 12 month. Per vaginum examination showed bulky uterus. USG showed bulky uterus and increased endometrial thickness. All other haematological, biochemical, microbiological and coagulation test results were unremarkable. Her hysterectomy was performed, and specimen of uterus was received for histopathological examination. MRI of the specimen was done and showed small cystic areas of variable sized in the outer myometrial region – these appeared hyperintense on T2W and iso to hypointense on T1W images. The serosal surface of uterus had slightly bluish tinge and the outer one third of myometrium had blackish brownish appearance and showed sieve like spaces. In addition to the hemangioma, a solitary intramural leiomyoma of 1 cm in diameter was found in the uterine wall. (Figure 2A) Microscopic examination of brownish area of uterus showed proliferation of cavernous vascular spaces lined by endothelial cells. These spaces were filled with blood. (Figure 2B)

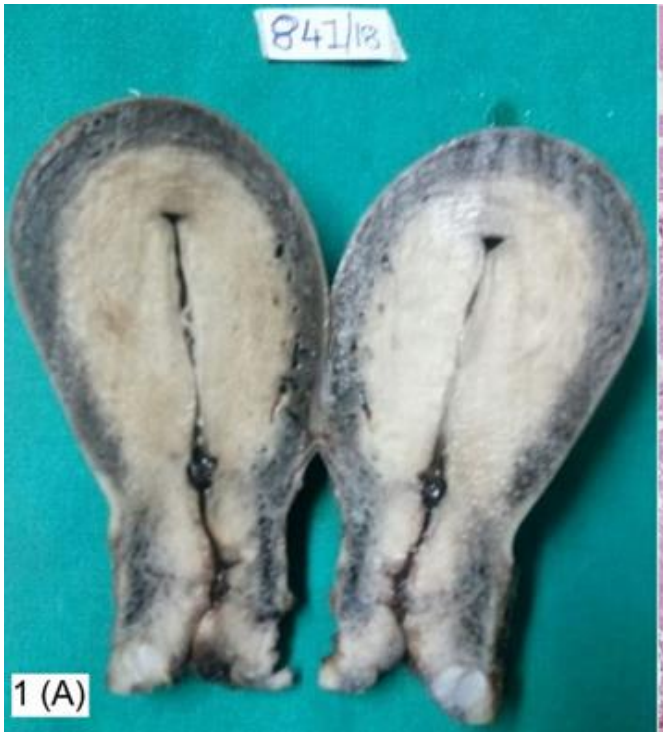

Figure 1A: Cut surface of uterus shows blackish brownish appearance and sieve-like spaces on outer one third of myometrium**.**

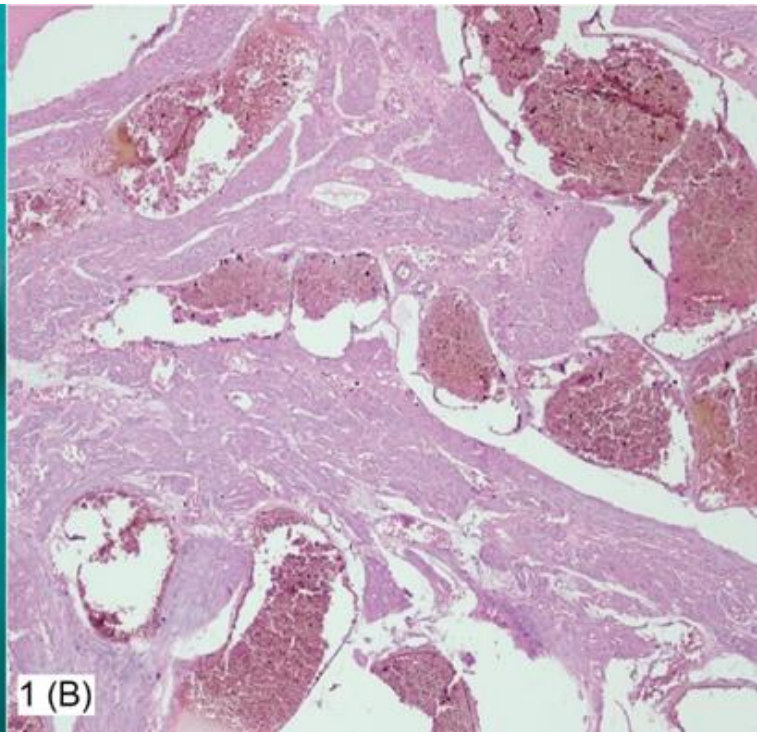

Figure 1B: Shows vascular spaces lined by flat endothelial cells and containing RBCs. (H&EX 400)

DISCUSSION

Uterus is the most common site for hemangioma. The first report of uterine hemangioma was described in 1897 as an incidental discovery from an autopsy of a young women who died 24 hours after delivering twins.[1] Most common presentation of a localized hemangioma is as an endometrial polyp or a localized mass in the myometrium.[5] Histologically, it is composed of small sized capillaries confined to the endometrium, whereas the cavernous type demonstrates large vascular channels and it diffusely involves the uterus.[6] The hemangioma possibly originates from pluripotent, embryogenic, mesodermal cells within the uterus.[1] The cells lining the vascular spaces are

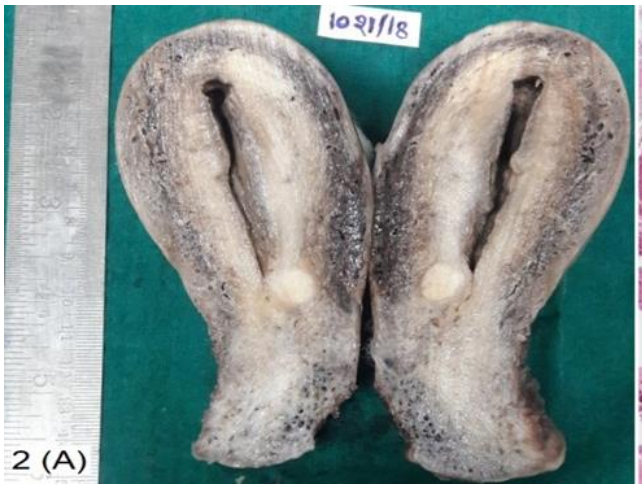

Figure 2A: Cut surface of uterus shows blackish brownish appearance and sieve-like spaces on outer one third of myometrium and a solitary intramural leiomyoma of 1 cm in diameter.

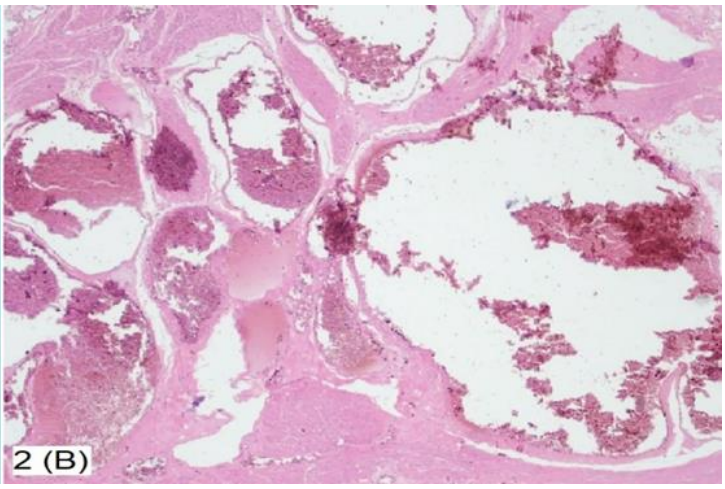

Figure 2B: Shows vascular spaces lined by flat endothelial cells and containing RBCs. (H&EX 400)

Table 1: Shows cases of uterine hemangioma reported in various countries.

Ref. No	Year of Publication	Country	No. of cases	Ref. No	Year of Publication	Country	No. of cases
11	2019	India	1	38	2011	Mexico	1
13	2019	India	1	39	2011	Morocco	1
14	2019	Taiwan	1	10	2010	Brunei	1
15	2018	India	1	40	2009	Serbia	1
16	2018	India	1	41	2009	Italy	3
17	2017	Africa	1	5	2008	USA	1
18	2017	Turkey	1	42	2007	Taiwan	1
19	2017	Korea	1	43	2006	India	1
20	2017	India	1	9	2006	India	1
21	2017	Africa	1	44	2006	Turkey	1
22	2016	USA	1	45	2005	India	1
12	2016	India	1	46	2005	Korea	1
23	2016	Nigeria	1	1	2005	USA	1
24	2016	Australia	1	47	2005	Serbia	1
25	2016	Canada	4	48	2004	UK	1
26	2016	USA	1	49	2003	Pakistan	1
27	2016	Korea	1	50	2002	Turkey	1
28	2015	Australia	3	51	2001	Germany	1
29	2015	Serbia	1	3	1995	India	1
30	2015	Serbia	1	52	1993	USA	1
31	2014	USA	1	53	1993	Israel	1
32	2013	USA	1	54	1991	USA	1
33	2012	USA	1	55	1980	USA	1
2	2011	Taiwan	5	56	1976	Israel	1
34	2011	USA	1	57	1965	USA	4
35	2011	Korea	1	58	1954	Serbia	1
36	2011	India	1	59	1940	USA	1
37	2011	India	1		1897	Details is not available	1

immunoreactive for endothelial markers including von Willebrand factor, CD31 and CD34. Weiss et al.[7] suggested different immunophenotypic profiles to classify a hemangioma into different phases. During the early proliferative phase (0–12 month), the tumor cells are immunoreactive for proliferating cell nuclear antigen, vascular endothelial growth factor and type IV collagenase. Proliferating cell nuclear antigen and vascular endothelial growth factor can stain both endothelium and pericytes, while type IV collagenase stains only the endothelium. In contrast, during the involuting phase (1–5 year), these substances diminish, while the tissue inhibitors of metalloproteinases and antiangiogenic factors dramatically increase.[7] Many theories propose that hormones play a crucial role in development of hemangiomas. Estrogen induces an increase in endothelial progenitor cells (EPCs), angiogenic factors such as matrix metalloproteinase, vascular endothelial growth factor, nitric oxide and other related factors.[8,9] Uterine hemangiomas should be differentiated from other benign tumors like adenomatoid tumor, lymphangiomas and arteriovenous malformation. Uterine adenomatoid tumors mostly occur as a tubercular mass with unclear boundary. The tubercles are generally smaller than 3 cm, located in the myometrium and often occur near the serosa or cornu. Tumors are sticky, slimy and some are even mucous drawing. The gross pathological sections are solid with medium of callous texture, which are filled with braid or swirl pattern. Microscopic examination shows variable sized and shaped cavities within hyperplastic smooth muscle tissues, which are lined by squamous, cuboidal, or columnar cells. Cavities may be empty or filled with mucous secretions that are stained pink or pale blue on Periodic acid Schiff (PAS) stain. Cast off cells are found in glandular cavities. Positive expression of HBME-1 and calretinin support the evidence of mesothelial origin. Diagnosis of adenomatoid tumor can be made by combination with CK and positive immunohistochemical staining for mesothelial origin marker. Lymphangiomas are composed of dilated lymphatic vessels lined by endothelium and filled with lymphatic fluids. IHC such as S-100, CD31, CD34, CKS, EMA is useful for differentiating lymphangiomas. Microscopic examination of AV malformation of uterus shows many ecstatic congested thick-walled vessels and vessels can be seen upto serosal wall of the uterus. Most of the uterine hemangioma are found incidentally, but they may cause abnormal vaginal bleeding and hence should be included in the differential diagnosis of patients with vaginal bleeding. In our both the cases USG were normal and could not diagnosed hemangioma. Hence MRI of resected specimens of uterus were done, to understand value of this investigation to identify uterine hemangioma. MRI in our both cases showed few clustered small cystic areas of variable sizes are seen in the external myometrial region, these appear hyperintense on T2W and iso to hypointense on T1W images. Treatment for uterine hemangioma is both conservative and surgical. Conservative treatment includes carbon dioxide laser excision, cryotherapy, radiotherapy, electrocauterization, internal artery ligation, uterine artery embolization, conisation, laser ablation and local excision.[5,9,10] Hysterectomy may be considered for hemangiomas, if they are refractory to conservative treatment.[10]

Only 73 cases of hemangioma are reported in the literature which comprised of uterine hemangioma in 31 cases, cervical 30 cases, cervical with uterine 9 cases, one case each of vaginal and fallopian tube hemangioma and one case of diffuse involvement of vulva, uterus and placenta.13 out of 73 cases reported in Indian literature , 6 cases are of uterine hemangioma and 7 cases are of cervical hemangioma. The clinical presentation in 6 of these cases was menorrhagia, 4 presented with post coital bleeding, 2 with abdominal pain and one case had post-menopausal bleeding.

CONCLUSION

Accurate diagnosis of uterine hemangioma has clinical relevance. In patients with uterine hemangioma, vaginal delivery is preferred owing to the possibility of incising the lesion during caesarean delivery. If caesarean delivery is required, a vertical incision should be performed. Symptomatic uterine hemagiomas cause vaginal bleeding and hence should be included in the differential diagnosis of patients with abnormal vaginal bleeding.

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