Struma ovarii: mimicking as malignant ovarian tumour

Abstract

Struma ovarii is a variant of mature cystic teratoma, with predominant thyroid element. Diagnosis is by histopathology. It may mimic as ovarian malignancy. It may be associated with ascites in minority; even CA-125 has been found to be raised in some cases. We here report a case of struma Ovarii, which mimicked as malignant ovarian tumour. It is difficult to diagnose these cases preoperatively as there are no specific clinical, radiological or serum markers for these tumours in the absence of thyroid abnormality.

Keywords: struma ovarii, monodermal ovarian teratoma

Introduction

Struma ovarii is a rare histological diagnosis, a variant of dermoid in which thyroid tissue constitute >50% of the component, also called as monodermal ovarian teratoma where thyroid tissue predominates. This tumour was first described in 1889 by Boettlin. It comprise 1% of all ovarian tumour and 2.7% of all dermoid tumour. It is mostly benign, with malignant transformation in just 5%. It rarely produces sufficient thyroid hormone to cause hyperthyroidism, or exceptionally become malignant, and thus managed as a thyroid cancer.

Case

Mrs. X 70yrs. Postmenopausal lady P4+0+0+4 presented with vague mass per abdomen and palpitation for last 4 months. She was non diabetic and nor motensive. She was on tab Metaprolol, prescribed by physician for palpitation, for last 4months. She also had sinus tachycardia, with no features of thyrotoxicosis, anaemia or fever. Her thyroid profile was normal. On examination, no pallor, icterus or lymph node enlargement was present; pulse 108bpm, respiratory and cardiovascular examination was normal. On abdominal examination 5x5cm firm mass with smooth surface & non tender was felt in suprapubic region arising from pelvis. Per speculum findings of senile changes in vagina and cervix. On bimanual pelvic examination revealed a large firm mass 14x12cm felt separately, from to uterus.

Ultrasound showed a large complex heterogenous pelvic mass likely to be ovarian malignancy. CECT Abdomen showed a solid multicystic lesion in pelvis (11x10x6cm) likely right ovarian malignant malignancy (Figure 1) with multiple heterogenous attenuating masses in liver suspicious of metastasis (Figure 2).

Blood investigation including ovarian tumour markers were normal (S.TSH-3.2Miu/ml, CA 125-42.1, AFP 1.3, Beta hCG(11.1). ECG showed Sinus tachycardia with normal QRS complex. 2D Echo done showed mild PAH, Normal LV function (LVEF 65%). In view of the suspected advanced ovarian malignancy with liver nodule suspicious of metastasis, neo-adjuvant chemotherapy was planned. So FNAC from the liver nodule was done; which showed blood mixed aspirate, no malignancy.

Decision for surgery was taken for confirmation of diagnosis and debulking of the tumour. Exploratory Laprotomy was done- Intra-operative findings were

1. Mild ascites (serous) 30-40ml.
2. Left ovarian multilobulated mass 12x10cm with solid areas. Right ovary was healthy looking
3. Abdomen was explored. A polypoidal mass 4x3cm felt over left lobe of liver. Omentum, bowel, G.B, Stomach, spleen found to be apparently normal.

Total abdominal hysterectomy+bilateral salpingoophorectomy+infracolicomentectomy+Hepatic mass resection+multiple peritoneal biopsies done and sent for histopathological examination.

Histopathology of left ovarian tumour showed variably sized thyroid follicles filled with colloid and lined by cuboidal to flattened epithelium. HPR was benign Struma Ovarii of left ovary. Liver mass was a cavernous haemangioma. Peritoneal fluid was negative for malignant cells.

Figure 1 Complex pelvic mass of 11x10cm.
Struma ovarii: mimicking as malignant ovarian tumour

Discussion

Mature cystic teratoma (Dermoid cyst) constitute majority of ovarian germ cell tumours and constitute 20% of ovarian tumours. They are often discovered incidentally on physical or sonographic examination. They may contain hair, teeth or bone and fatty material. Thyroid tissue is rarely found on histological examination, but if the thyroid tissue predominates (>50%) then the term Struma Ovarii is applied.

Struma ovarii a very rare histological diagnosis, is found in just 3% of ovarian teratoma, 2% of all germ cell tumours and 0.5% of all ovarian tumours. Malignant transformation is uncommon, in only about 5% struma ovarii. The ectopic thyroid tissue explains why struma ovarii is sometimes associated with thyrotoxicosis.

Most patients of struma ovarii are in reproductive age, but it can be diagnosed at any age. Patients may be clinically asymptomatic or may be associated with ascites, with or without pleural effusion (Pseudo-Meig’s syndrome). Macroscopically, the tumour is mostly solid or solid-cystic, and sometimes cystic with solid areas or protusions. Cut section may look greyish, with fleshy glistening appearance due to thyroid component. On microscopy, it is composed of mature thyroid tissue consisting of colloid containing follicles of various sizes.

Ultrasound is primary modality for identification and characterisation of any Ovarian mass. Mature cystic teratoma shows focal high echogenic nodules with heterogeneous internal echoes. Typical feature of struma ovarii on sonography is presence of well-defined solid tissue with a smooth margin that is vascularised on Doppler study (“struma pearl”). A MRI can at times can be helpful due to its ability to distinguish between fluids and fat in the diffusion weighted image. The classic MR imaging appearance of struma ovarii includes multiple intra-cystic solid areas, representing thyroid tissue, that are of low signal intensity on T2-weighted images and intermediate signal intensity on T1-weighted images.

This characteristic feature is not very easily seen / interpreted on radiologic examination. Once diagnosed- Surgery is the primary modality of management. Conservative surgery (cystectomy, oophorectomy) is recommended for struma ovarii especially if they have fertility potential; and laproscopic approach should be the preferred route owing to obvious advantages.

Benign Struma ovarii and malignant forms without metastasis has good prognosis. Ascitis or pleural effusion if present disappears after surgery. Malignant cases should also undergo total thyroidectomy followed by radioiodine therapy. Serum thyroglobulin is used as tumour marker for follow up in these malignant cases. As there have been only few reported malignant cases, there is no consistent data on protocol of management of such cases.

Conclusion

Struma ovarii can mimic ovarian malignancy clinically, when presented with a complex ovarian mass, with ascites and an elevated CA-125. Management of Struma ovarii is by surgery. If “struma Pearl” can be identified pre-operatively, extensive laparotomies may be avoided. Benign struma ovarii has good prognosis and survival. Efforts should be made to diagnose this condition pre-operatively, so as to avoid extensive laparotomies, as these benign cases can be managed very effectively by laproscopic approach.

Acknowledgements

None.

Conflicts of interest

No conflicts of interests have been found.

References


Figure 2 Triple phase CT showing liver lesion suspicion of metastasis.