

## CASE REPORT

## GENITAL TUBERCULOSIS MIMICKING CARCINOMA OVARY: CAN ULTRASOUND GUIDED BIOPSY BE A RESOLUTION!

Nosheen Akhtar, Zartaj Hayat, Fatima Nazim

Department of obstetrics and gynaecology, Foundation University Medical College, Fauji Foundation Hospital Rawalpindi-Pakistan

Genital tuberculosis mimicking carcinoma ovary is a well-known dilemma as there is no definitive serological or imaging modality for diagnosing abdominopelvic tuberculosis. A 20-years-old unmarried girl presented with complex adnexal mass, mild ascites and CA 125 >1000. Her staging laparotomy and frozen section was planned. Laparotomy revealed miliary tuberculosis and frozen section confirmed the diagnosis of tuberculosis. Patient was started with anti-tuberculosis treatment and follow up showed resolution of cysts. Another case is of 31 years old unmarried lady presented with history of abdominal pain. Her ultrasound revealed complex adnexal mass. CT scan revealed bilateral adnexal masses with solid and cystic lesion, ascites, para aortic lymphadenopathy; features suggestive of mitotic lesion. Her CA 125 was >1000. Family history of tuberculosis was positive. Keeping her age group and family history in view; workup of tuberculosis was performed. X ray chest was normal. Tuberculin skin test was 10mm and Quantiferon gold test was negative. In this case a decision of ultrasound guided biopsy was made. Result of biopsy showed granulomatous inflammation confirming pelvic tuberculosis. Ultrasound guided biopsy is a minimally invasive procedure with high diagnostic yield can be very helpful in such case. Clear guidelines should be developed nationally owing to the high prevalence of tuberculosis in our country to avoid unnecessary laparotomies.

**Keywords:** Genital tuberculosis; Adnexal cyst; CA125; Ultrasound guided biopsy, Tuberculosis

J Ayub Med Coll Abbottabad 2017;29(3):496-98

## INTRODUCTION

Tuberculosis (TB) is an infectious disease caused by the bacterium *Mycobacterium tuberculosis* (MTB).<sup>1</sup> Most commonly affected organ is lung (pulmonary TB) but in 15–20% of active tuberculosis other organs are involved.<sup>2</sup> Up to 90% of case infection with mycobacterium are asymptomatic known as latent infection with a 10% lifetime chance of progression to active tuberculosis.<sup>3</sup> Main risk factors for the disease are poverty, overcrowding, malnutrition and co infection with HIV.<sup>4</sup> This make it a disease of developing countries as according to WHO the six countries that stand out as having the largest number of incident cases in 2014 were India, Indonesia, Nigeria, Pakistan, People's Republic of China and South Africa.<sup>1</sup>

General signs and symptoms include fever, chills, night sweats, loss of appetite, weight loss, and fatigue. Definitive diagnosis is based upon of identification of organism in clinical sample (sputum, blood, tissue biopsy).

Abdominopelvic tuberculosis is the sixth most frequent site of extra pulmonary tuberculosis.<sup>5</sup> It presents with non-specific symptoms most commonly a dull abdominopelvic pain, menstrual disturbances or infertility.<sup>6</sup> Abdominopelvic imaging is very often misleading as adnexal mass, ascites, nodular peritoneal thickening and omental caking are features suggestive of disseminated ovarian carcinoma but they are also seen in tuberculosis.<sup>7</sup> Regarding tumour

markers CA 125 is raised in ovarian cancer but it is also raised in many benign conditions including abdominopelvic tuberculosis.<sup>8</sup> Moreover, available test used for diagnosis of tuberculosis involve tuberculin skin test (TST) and quantiferon gold test (QFT-G) and various tests on ascitic fluid etc. According to CDC guidelines 2005, in BCG vaccinated people the specificity and sensitivity of QFT-G was 96% & 81%, compared with 49% & 78% for the TST in active TB.<sup>9</sup> Various test on ascitic fluid are described; among them ascitic fluid PCR have been proven useful.<sup>10</sup> Definitive diagnosis relies upon identification of microorganism in a clinical sample e.g., sputum, pus, or a tissue biopsy.<sup>11</sup> Diagnostic laparoscopy or laparotomy is usually considered necessary, where intraoperative frozen sections can aid in avoiding unnecessary extensive surgery.<sup>10,12</sup> However an option of ultrasound guided biopsy may considerably reduce the morbidity and cost associated with laparotomy and laproscopy<sup>13</sup> it may prove to be a useful investigation tool in future to avoid surgery in tuberculosis patients.

We have experience of managing two cases both referred from periphery as case of carcinoma ovary. Although clinical presentation was similar in both cases management was somewhat different.

## CASE 1

A 20-year-old girl was referred to Gynaecology department of Foundation University Medical College Fauji Foundation Hospital Rawalpindi with

complaint of abdominal pain and weight loss for the last 6 months. There was no history of any malignancy or chronic illness in the family. Her BMI was 21 kg /m<sup>2</sup>. General physical examination (GPE) was unremarkable. Abdominal examination revealed 14 weeks size hard, fixed mass with irregular margins. Her baseline investigations were unremarkable. Her abdominopelvic ultrasound revealed a hypoechoic complex right adnexal mass measuring 70×60 mm. Left ovary and uterus was normal looking. CECT showed solid cystic masses with surrounding soft tissue stranding noted in bilateral adnexa. Left adnexal mass was measuring 63×35 mm and right adnexal mass was 30×30 mm. Low attenuation are noted suggesting necrosis. Mild to moderate fluid in pouch of Douglas (POD) was seen. Her CA 125 level was >1000, the diagnosis of ovarian cancer was made and exploratory laparotomy was planned which revealed miliary tuberculosis with peritoneal thickening, multiple dense adhesions, and adnexal cysts formation. During surgery, frozen section was performed, and diagnosis of granulomatous disease was confirmed the diagnosis of tuberculosis. Patient was started with ATT, and her follow up ultrasound showed resolution of adnexal cysts.

## CASE 2

A 31-year-old girl, unmarried lady was referred to Gynaecology department. Her ultrasound was done for the evaluation of abdominal pain at some private hospital that revealed a complex adnexal mass. Regarding history; there was history of anorexia and weight loss. No history of fever or night sweat was there. Family history of tuberculosis was positive in father two years ago which was treated and cured. She was a girl of average built with BMI 19 kg/m<sup>2</sup>. GPE revealed pallor with no lymphadenopathy. Abdominal examination revealed a 16 weeks size hard fixed mass with irregular margins. Her baseline investigations were unremarkable except low haemoglobin level, i.e., 9.5 gm/dl. Abdominopelvic ultrasound revealed an ill-defined vascular complex mass with solid and cystic areas noted in right adnexa abutting the uterus having indistinct interface with the uterus. Mild ascites with internal septation noted. Her CA125 level was >1000 iu/L (5–30 IU/L), LDH was 759. Her CECT abdomen and pelvis showed bilateral adnexal masses, peritoneal fat stranding, mesenteric and para aortic lymphadenopathy; features are suggestive of mitotic lesion. Keeping in view the age group, family history and our previous experience of managing a similar case we started work up for tuberculosis. Her X-ray chest was normal. ESR was 27 mm tuberculin test was 10 mm. Quantiferon gold test was negative. A

multidisciplinary approach involving chest specialist, oncologist and gynaecologist was opted. The specialist panel was of the opinion that this is a case of ovarian carcinoma, yet a plan of ultrasound guided biopsy was made. The histopathology result was granulomatous inflammation with suggestive of tuberculosis confirming the diagnosis of pelvic tuberculosis. Hence anti-tuberculous drugs started.

## DISCUSSION

Peritoneal TB with nonspecific symptoms mimicking ovarian malignancy is a serious problem especially in developing countries and unfortunately it is not uncommon in our country as stated by WHO, Pakistan is one of six countries having maximum disease burden.<sup>1</sup> Literature review is clear on the consensus that diagnosis of peritoneal TB before operation is not easy; there is no particular laboratory or imaging assessment to differentiate this disease from advanced ovarian cancer hence laparotomy is deemed necessary.<sup>14,15</sup> Our both cases were young unmarried girls, presented with abdominal pain, complex adnexal mass, and CA 125 >1000. In first case, exploratory laparotomy in conjunction with frozen section was performed. In our second case, complete workup of tuberculosis was performed, the workup didn't yield confirmed conclusion and decision of ultrasound guided biopsy was done.

Chest X ray was normal in both cases and literature shows it is normal in up to 40% cases of peritoneal tuberculosis.<sup>16</sup> Although CA125 lacks specificity but titres higher than 1,000 U/ml usually correlate with malignancy.<sup>17</sup> Piura B *et al.* reported case of peritoneal tuberculosis with a CA125 level of >1000 U/ml.<sup>18</sup> Our both cases were having CA 125 >1000 level and both were having abdominopelvic tuberculosis.

In our second case tuberculin skin test was borderline positive and quantiferon gold test was negative leading to inconclusive test results regarding TB. CECT scan revealed complex adnexal masses with ascites and lymphadenopathy suggestive of mitotic lesion and in all available case series of abdominopelvic tuberculosis imaging could not discriminate abdominal tuberculosis from ovarian cancer.<sup>19</sup>

Obviously a confirm diagnosis is a must prior to initiation of treatment to avoid serious consequences. Very often histopathology is required for this purpose as ascitic fluid cytology, acid fast bacilli (AFB) and PCR all have variable sensitivity. Laparotomy, laparoscopy and ultrasound guided tru cut biopsy are the three methods which are used to obtain tissue for histopathology. Although laparotomy is considered necessary in many case

series where initial workup of tuberculosis was negative, the associated morbidity is high.<sup>20</sup> Laparoscopy is associated with less morbidity but may be difficult in the presence of adhesions requiring laparotomy.<sup>21</sup> Use of frozen section help avoiding unnecessary extensive surgery.<sup>22</sup> Ultrasound guided tru-cut biopsy has been a valuable first line approach in the evaluation of adnexal masses as it is minimally invasive procedure .One study revealed that tru cut biopsy when used for evaluation of adnexal masses 14.5% turned out to be tuberculosis.<sup>23</sup> The yield, accuracy and safety in the diagnosis of adnexal masses is very high.<sup>24</sup> Hence ultrasound guided core biopsy may be a preferred option in selected cases of adnexal masses as associated morbidity and cost is very low.<sup>24</sup>

## CONCLUSION

Abdominopelvic tuberculosis is a common disease in our country. The clinical presentation mimic carcinoma ovary, hence differential diagnosis of abdominal tuberculosis should be kept in mind. Use of ultrasound guided biopsy in selected cases may be very helpful. Need of time is to report all such cases and make a consensus on diagnostic test owing to endemicity of tuberculosis in our country.

## REFERENCES

1. WHO. Tuberculosis. Fact sheet N 104. Updated October 2015. 2016.
2. Jindal S, Shankar P, Raof S, Gupta D. Textbook of Pulmonary and Critical Care Medicine. New Delhi: Jaypee Brothers Medical Publisher; 2011.
3. Skolnik R. Global health 101. 2nd ed. Jones & Bartlett Publishers; 2011.
4. Griffith D, Kerr C. Tuberculosis: disease of the past, disease of the present. *J Perianesth Nurs* 1996;11(4):240–5.
5. Sharma MP, Bhatia V. Abdominal tuberculosis. *Indian J Med Res* 2004;120(4):305–15.
6. Jana N, Mukhopadhyay S, Dhali GK. Pelvic tuberculosis with elevated serum CA125: a diagnostic dilemma. *J Obstet Gynaecol* 2007;27(2):217–8.
7. Barutcu O, Erel HE, Saygili E, Yildirim T, Torun D. Abdominopelvic tuberculosis simulating disseminated ovarian carcinoma with elevated CA-125 level: report of two cases. *Abdom Imaging* 2002;27(4):465–70.
8. Moss EL, Hollingworth J, Reynolds TM. The role of CA125 in clinical practice. *J Clin Pathol* 2005;58(3):308–12.
9. CDC. Guidelines for the investigation of contacts of persons with infectious tuberculosis: recommendations from the National Tuberculosis Controllers Association and CDC. *MMWR Recomm Rep* 2005;54(RR-15):1–47.
10. Uzunkoy A, Harma M, Harma M. Diagnosis of 16 abdominal tuberculosis: experience from 11 cases and review of the literature. *World J Gastroenterol* 2004;10(24):3647–9.
11. Foundation for Innovative New Diagnostics, Special Programme for Research and Training in Tropical Diseases, World Health Organization, editors. Diagnostics for tuberculosis: global demand and market potential. Geneva: WHO on behalf of the Special Programme for Research and Training in Tropical Diseases; 2006.
12. Vagenas K, Stratis C, Spyropoulos C, Spiliotis J, Petrochilos J, Kourea H, *et al.* Peritoneal carcinoma versus peritoneal tuberculosis: a rare diagnostic dilemma in ovarian masses. *Cancer Ther* 2005;3:489–94.
13. Oge T, Ozalp SS, Yalcin OT, Kabukcuoglu S, Kebapci M, Arik D, *et al.* Peritoneal tuberculosis mimicking ovarian cancer. *Eur J Obstet Gynecol Reprod Biol* 2012;162(1):105–8.
14. Devi L, Tandon R, Goel P, Huria A, Saha PK. Pelvic tuberculosis mimicking advanced ovarian malignancy. *Trop Doct* 2012;42(3):144–6.
15. Xi X, Shuang L, Dan W, Ting H, Han MY, Ying C, *et al.* Diagnostic dilemma of abdominopelvic tuberculosis: a series of 20 cases. *J Cancer Res Clin Oncol* 2010;136(12):1839–44.
16. Bhattacharyya SK, Mandal A, Thakur SB, Mukherjee S, Saha SK, Ghoshal AG. Radiological evaluation of chest in abdominal tuberculosis. *J Clin Diagn Res* 2011;5(5):926–28.
17. Le Thi HD, Mohattane H, Piette JC, Bogdan A, Auzeyber A, Touitou Y, *et al.* Specificity of CA 125 tumor marker. A study of 328 cases of internal medicine. *Presse Med* 1988;17(43):2287–91.
18. Piura B, Rabinovich A, Leron E, Yanai-Inbar I, Mazor M. Peritoneal tuberculosis mimicking ovarian carcinoma with ascites and elevated serum CA-125: case report and review of literature. *Eur J Gynaecol Oncol* 2002;23(2):120–2.
19. Yassae F, Farzaneh F. Familial tuberculosis. mimicking advanced ovarian cancer. *Infect Dis Obstet Gynaecol* 2009;736018.
20. Patel SM, Lahamge KK, Desai AD, Dave KS. Ovarian carcinoma or abdominal tuberculosis? -A diagnostic dilemma: study of fifteen cases. *J Obstet Gynaecol India* 2012;62(2):176–8.
21. Koc S, Beydilli G, Tulunay G, Ocalan R, Boran N, Ozgul N, *et al.* Peritoneal tuberculosis mimicking advanced ovarian cancer: A retrospective review of 22 cases. *Gynecol Oncol* 2006;103(2):565–9.
22. Heatley MK. A systematic review of papers examining the use of intraoperative frozen section in predicting the final diagnosis of ovarian lesions. *Int J Gynecol Pathol* 2012;31(2):111–5.
23. OgeT, Yalcin OT, Ozalp SS, Kebapci M, Aydin Y, Telli E. Sonographically guided core biopsy: a minimally invasive procedure for managing adnexal masses. *J Ultrasound Med* 2013;32(11):2023–7.
24. Thabet A, Somarouthu B, Oliva B, Gervais DA, Hahn PF, Lee SI. Image-guided ovarian mass biopsy: efficacy and safety. *J Vasc Interv Radiol* 2014;25(12):1922–7.

Received: 27 September, 2016

Revised: 29 September, 2016

Accepted: 3 October, 2016

### Address for Correspondence:

Nosheen Akhtar, Department of obstetrics and gynaecology, Foundation University Medical College, Fauji Foundation Hospital Rawalpindi-Pakistan

Email: drnosheen08@gmail.com