Journal of Neonatal Surgery
ISSN(Online): 2226-0439
Vol. 14, Issue 1s (2025)
https://www.jneonatalsurg.com

OPEN ACCESS

Bilateral Tuba Ovarian Tuberculosis Mimicking Ovarian Carcinoma in an 18 Year Old Woman

Harun Iskandar[1], Dewi Setiawati[2], Hasta Handayani Idrus[3,4]

[1]Departement of Internal Medicine, Pulmonology Division, Faculty of Medicine, Hasanuddin University, Makassar, Indonesia

[2]Department of Obstetrics and Gynecology, Faculty of Medicine and Health Sciences State Islamic University of Alauddin, Makassar, Indonesia

[3]Department of Biomedical Sciences, Postgraduate School, Hasanuddin University (UNHAS), Makassar, Indonesia

[4]Center for Biomedical Research, Research Organization for Health, National Research and Innovation Agency (BRIN), Jakarta, Indonesia

[2]Medical & Health Faculty of Alauddin University

Cite this paper as: Harun Iskandar, Dewi Setiawati, Hasta Handayani Idrus, (2025) Bilateral Tuba Ovarian Tuberculosis Mimicking Ovarian Carcinoma in an 18 Year Old Woman. *Journal of Neonatal Surgery*, 14 (1s), 698-703.

ABSTRACT

Background: Tuba-ovarian tuberculosis (TB) is a rare extrapulmonary form of tuberculosis that can closely mimic ovarian carcinoma, posing a diagnostic challenge due to similar clinical and imaging presentations. This case highlights the importance of considering TB in the differential diagnosis of adnexal masses, particularly in young women from TB-endemic areas.

Case Presentation: An 18-year-old woman presented with chronic pelvic pain, abdominal distension, low-grade fever, and significant weight loss over three months. Clinical examination revealed a palpable pelvic mass. Laboratory findings showed elevated CA-125 levels (420 U/mL), raising suspicion of ovarian carcinoma. Imaging studies, including pelvic MRI, demonstrated bilateral adnexal masses with ascites and omental thickening, findings suggestive of advanced ovarian malignancy. Exploratory laparotomy revealed bilateral tubo-ovarian masses, dense adhesions, and caseous material. Histopathological examination confirmed granulomatous inflammation, and Ziehl-Neelsen staining identified acid-fast bacilli. Molecular testing (GeneXpert) confirmed the presence of Mycobacterium tuberculosis. The patient was diagnosed with bilateral tuba-ovarian tuberculosis and initiated on anti-tubercular therapy (ATT). Follow-up after six months showed significant clinical improvement, resolution of masses, and normalization of CA-125 levels.

Discussion: This case underscores the difficulty in differentiating tuba-ovarian tuberculosis from ovarian carcinoma based solely on clinical, serological, and imaging findings. Early histopathological and microbiological evaluation is critical to avoid misdiagnosis and unnecessary extensive surgical interventions.

Conclusion: Tuba-ovarian tuberculosis, although rare, should be included in the differential diagnosis of adnexal masses in young women, particularly in TB-endemic regions. Timely recognition and treatment can lead to favorable outcomes, preventing undue morbidity.

Keywords: *tuba ovarian tuberculosis, ovarian carcinoma mimicry, granulomatous inflammation, pelvic mass, anti-tubercular therapy*

1. INTRODUCTION

Tuberculosis (TB) is a chronic infectious disease that has been known in humans for a very long timeUntil now. TB remains a problem worldwide. The total was 10.8 million people continue to fall ill with TB every year and the number has been rising.[2] Based on the location of TB, there are 2 types of TB, namely pulmonary TB and extra pulmonary TB.[1,2] The incidence of extrapulmonary tuberculosis is around 10% of TB as a whole, and can affect the genital organs in around 23.4%.[3] Bilateral tuba-ovarium tuberculosis is a rare form of genital tuberculosis that affects both the fallopian tubes and ovaries. Tuba-ovarian tuberculosis is a rare condition that can often mimic the symptoms of ovarian carcinoma, leading to misdiagnosis and delays in treatment. Patients with tuba-ovarian tuberculosis may present with similar symptoms as those with ovarian cancer, including abdominal pain and a palpable mass and decrease of body weight and also higher levels of Ca-125. Due to the overlap in symptoms, it is important for healthcare providers to consider tuba-ovarian tuberculosis as a differential diagnosis

in patients in regions where the disease is endemic. Early recognition and appropriate management are essential in providing optimal care for these patients.

The mechanism of tuba-ovarian tuberculosis can occur through direct spread from nearby structures, hematogenous/lymphatic spread, reactivation of a dormant bacillus from peritoneal tuberculosis, or primary via infected semen. Bilateral tuba-ovarium tuberculosis can have significant impacts on the reproductive system, leading to symptoms such as pelvic pain, abnormal menstrual cycles, and infertility. The infection can cause scarring and blockages in the fallopian tubes, preventing the eggs from reaching the uterus for fertilization. This can result in difficulty conceiving and an increased risk of ectopic pregnancy. Additionally, the inflammation and damage to the ovaries can affect hormone production and disrupt the normal functioning of the reproductive system. Early diagnosis and treatment are essential to prevent complications and preserve fertility in individuals with bilateral tuba-ovarium tuberculosis.[1,3]

The symptoms include: Lower abdominal or pelvic pain Menstrual irregularities, Abnormal vaginal discharge, infertility, leukorrhea, Weight loss and night sweat. A direct histopathological finding is the best diagnostic modality, other option is a Fine needle aspiration cytology. It is treated with a multi-drug antitubercular regimen. The standard of care is a minimun 6-month course of treatment and can be extend for widespread disease till 9-12 months of therapy. [4,5]

Case Presentation

A young woman, 18 years old, was referred from a district hospital with a suspected ovarian malignancy based on clinical symptoms and imaging findings. Her main complaint is lower abdominal pain, which she has been experiencing for the past 4 months. The pain feels like being stabbed and the complaints come and go, regardless of activity or changes in body position. The lower abdomen feels hot accompanied by an enlarged and hard lower right abdomen. Loss of appetite and significant weight loss of 4 kg in 4 months. History of frequent febrile and night sweats. The patient does not cough. No history of coughing up blood. She also has irregular menstrual cycles. She has been vaccinated with BCG. There is no history of antituberculosis drug use. There is no history of TB and no history of contact with TB patients.

The results of the patient's physical examination show moderate illness, adequate nutrition, and compos mentis. Blood pressure 120/80 mmHg, pulse 95 beats/minute regular, strong, respiration 20 breaths/minute, temperature 36°C, weight 55 kg, height 155 cm, body mass index 22.91 kg/m². Examination of the head and neck did not reveal any enlargement of the lymph nodes. Thoracic examination is within normal limits. Abdominal examination shows distension, palpable enlargement of the right and left lower abdominal masses, presence of ascites, and the liver and spleen were not palpable. The lower extremities show no edema. On the chest X-ray examination (Figure 1)

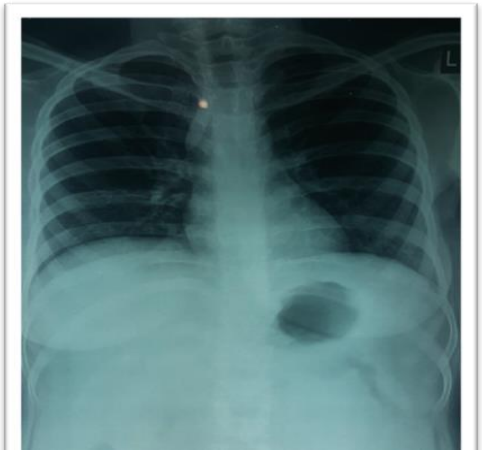

Figure 1. Chest X Ray, Cor dan lung in normal limit

Her laboratory investigation produced the following result: leukocytes 6,400/ul, hemoglobin 12.8 g/dl (12-16) and platelets 329,000/ul, Erythrocyte Sedimentation rate (ESR) 40 mm/hr, Ureum 22 mg/dl, Creatinin 0.7 mg/dl, SGOT 20 U/L, SGPT 23 U/L, random blood sugar 120 mg/dl, Albumin 3,6, HbSAg non reactive, the result of an enzyme-linked immunoassay for HIV were negative. PT 13.4, INR 1.26, APTT 27.2, CEA : 0.93 control 0-4.70, Ca-125 : 176.43 (control 0-25.0). Ascites Fluid Cytology Examination: Chronic inflammatory lesion. Abdominopelvic ultrasonongram performed and the result Bilateral adnexal cysts, ascites (Figure 2)

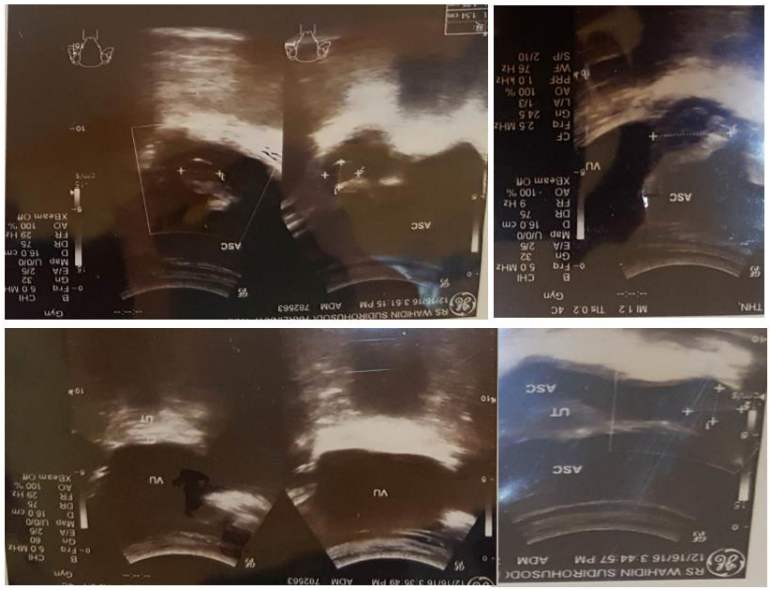

Figure 3: Gynecological Ultrasound

MSCT Whole Abdomen examination with contrast revealed bilaterall adnexal mass accompanied by ascites (Figure 2)

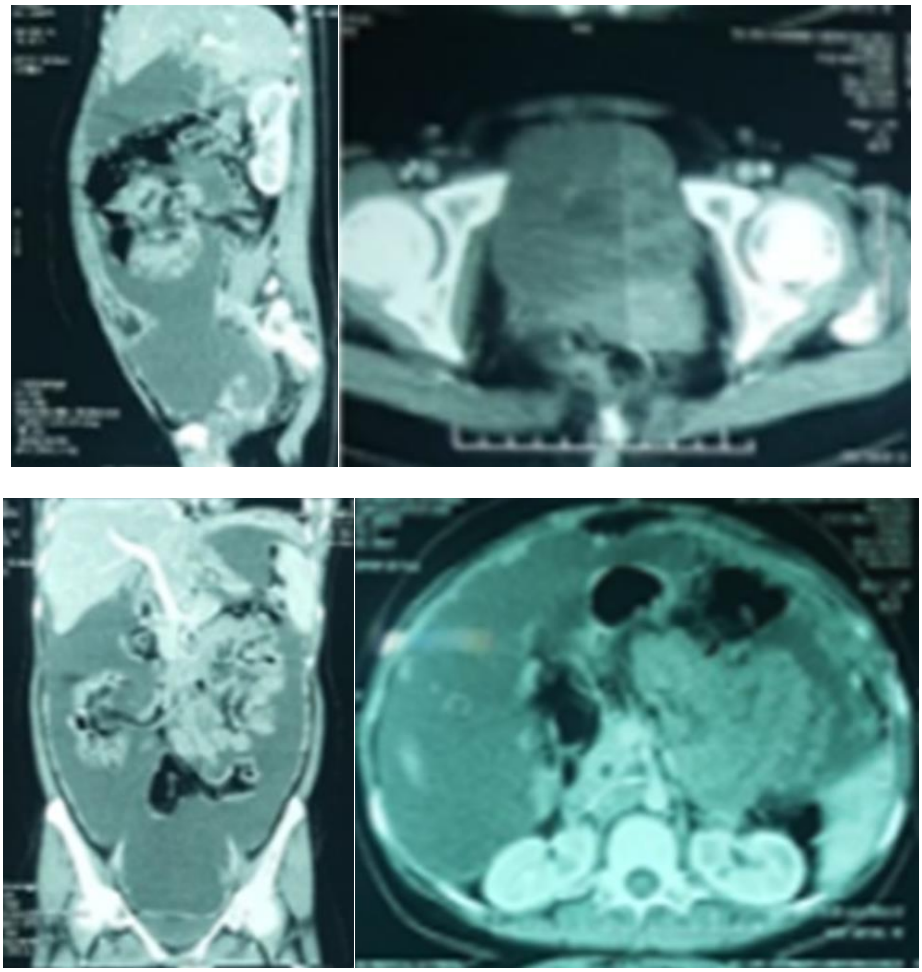

Image 2: MSCT Whole Abdomen with contrast

2. EXPLORATIONAL LAPARATOMY

An exploratory laparotomy examination was performed and resection and tissue biopsi was carried out in the omentum, both tubes and ovaries.

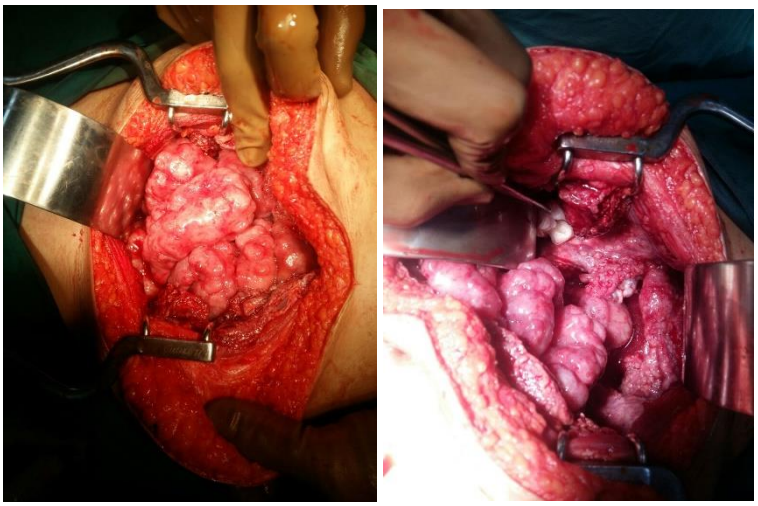

Figure 4: Exploratory Laparotomy and Tissue Biopsy

Conclusion of exploratory laparotomy: the uterus, ovaries, intestines, and omentum appeared nodular, accompanied by ascites. Partial salpingo-oophorectomy (Conservative surgical staging). This procedure is typically performed to treat conditions such as tubal-ovarian abscesses, ovarian cysts, or tumors. an incisions in the abdomen to visualize and remove the affected tissue. The remaining healthy tissue is left intact to preserve fertility and hormonal function. Tissue biopsy: Omentum, both tubes, and ovaries show a picture of granulomatous inflammation.

Histopathological Examination (09-01-2017

1. Omentum: a piece of tissue measuring 3.5x3.5x2 cm, brownish-white, nodular, solid, elastic.
2. Right Tube: a piece of tissue measuring 1.5x1x0.9 cm, solid white, elastic.
3. Right Ovary: a piece of tissue measuring 1.7x1x0.7 cm, white, sheet-like with some reddish areas.
4. Left Tube: a piece of tissue measuring 1.5x1x0.8 cm, solid white, brownish.
5. Left Ovary: a piece of tissue measuring 1x1x0.5 cm, solid white, elastic.

The five tissues from the omentum, both tubes, and both ovaries show the same appearance consisting of many epithelioid granulomas surrounded by lymphoid cells, with Langhans giant cells in the granulomas, that conclude tuba-ovarian tuberculosis.

Histopathological examination of specimens:

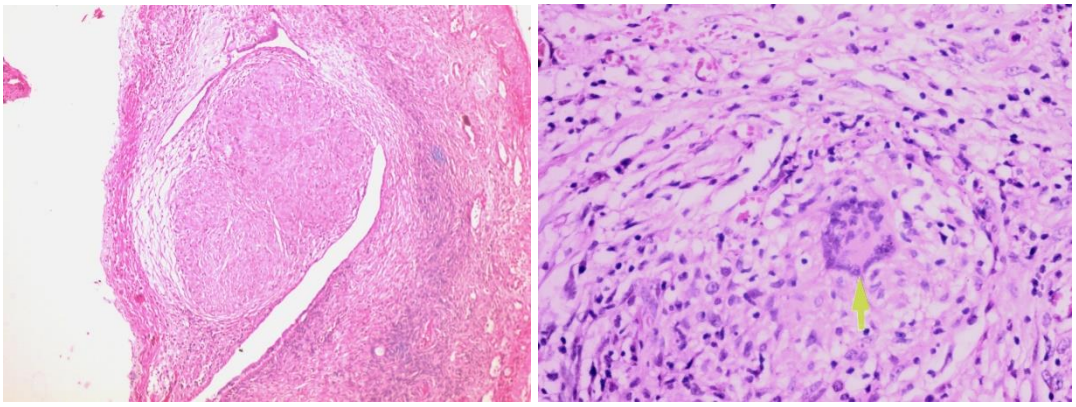

Fig 7: Epithelioid Granuloma with Langhans Giant Cells (4x) Fig 8: Epithelioid Granuloma with Langhans Giant Cells (yellow arrow), 40x

Based on the anamnesis, physical examination, supporting examinations, exploratory laparotomy, and tissue biopsy, the omentum, both tubes, and ovaries showed granulomatous inflammation (caseating granuloma), with no signs of malignancy. The diagnosis for this patient is bilateral ovarian tuba-ovarian tuberculosis. This patient was given intensive phase Category I OAT therapy (2HRZE/4RH) 4FDC 3 tabs/24 hours/orally. The patient was administered Category I OAT (2HRZE/4RH) 4FDC 3 tabs/24 hours/orally. After resection of lesion with partial salpingo-oophorectomy for fertility preservation and TB drugs for six months the patients getting well and also now had regular menstrual cycles and normal CA-125.

3. DISCUSSION

We report a woman 18 years old came to the referral hospital with chief complain chronc pain in lower abdominal with a palpable mass in lower abdominal. There was a subfebrile and night sweating. But there was no cough and history contack with tuberculosis patient. Tuba-ovarian tuberculosis and ovarian carcinoma can present with similar symptoms, such as abdominal pain, abdominal mass and irregular menstrual cycles. However, there are key differences that can help differentiate between the two conditions. Patients with tuba-ovarian tuberculosis may also experience symptoms such as low-grade fever, night sweats, higher ESR which are less commonly seen in ovarian carcinoma. The patien had also got vaccinated BCG. Eventhoug the patient had got BCG vaccination is effective at preventing tuberculosis in young children but is ineffective in adolescents and adults.[6] Immunoprotection therefore needs to be boosted in older populations. The patient was differential diagnosis to have ovarian carcinoma due to bilaterall adnexal mass with ascites on MSCT Whole Abdomen with contrast.[7] The results of the patient's Ca 125 examination showed an increase in Ca 125 levels: 176.43 (control 0-25). the higher levels of Ca-125 levels > 35 U/ml are found in 80 to 90% of ovarian carcinoma patients. The differential diagnosis of higher Ca 125 were ovarian carcinoma and ovarian tuberculosis. Ca-125 is secreted by different celomic epitheliums. Serum levels may be increased in malignant diseases, like ovarian cancer but also in other medical conditions, such as pulmonary and extrapulmonary tuberculosis.[8] In this patient, the diagnosis is bilateral tuba-ovarian TB because clinical symptoms supporting the diagnosis were found, and a CT scan of the abdomen showed an adnexal mass accompanied by ascites. The results of the histopathological examination microscopically show that the five tissue samples from the omentum, both fallopian tubes, and both ovaries exhibit the same characteristics, consisting of many epithelioid granulomas surrounded by lymphoid cells, with langhans giant cells present in the granulomas, and no malignant tumor nests. The diagnosis of ovarian TB is made based on the histological examination results of ovarian TB, which show the presence of epithelioid granuloma with central caseous necrosis and Langhans giant cells. Appropriate surgery to resection of mass following with partial salpingo-oophorectomy were performed to treat her. A partial salpingo-oophorectomy is a surgical procedure that involves the removal of a portion of one or both fallopian tubes and ovaries. This procedure is typically performed to treat conditions such as tubal-ovarian abscesses, ovarian cysts, or tumors. an incisions in the abdomen to visualize and remove the affected tissue. The remaining healthy tissue is left intact to preserve fertility and hormonal function

In this patient, we administered The WHO 2023 in its latest guidelines recommended that ovarian TB therapy involves administering rifampicin (R), isoniazid (H), pyrazinamide (Z), and ethambutol (E) daily for 2 months, followed by daily rifampicin (R) and isoniazid (H) for 4 months. The therapy can be extend to 9-12 months due to clinical response. Currently, the patient's condition has improved after taking the medication for 6 months. And also Ca-125 values decline to normal values during treatment. TB treatment with adequate and timely anti-TB drugs can improve ovarian function and enhance ovarian response with increased stromal ovarian blood flow in women suffering from ovarian TB. Generally, ovarian TB patients show improvement after anti-TB treatment.

4. CONCLUSION

Bilateral tuba-ovarium tuberculosis can mimicking ovarian carcinoma and diagnosis confirmation from histology. Resection of lesion with partial salpingo-oophorectomy for fertility preservation and alsoTB drugs for six months cured her and regulated menstrual cycles and decreased of Ca-125.

REFERENCES

[1] Barberis, N.L. Bragazzi, L. Galluzzo, M. Martini, The history of tuberculosis: from the first historical records to the isolation of Koch's bacillus, J. Prev. Med. Hyg. 58 (1) (2017) E9.

[2] Global tuberculosis report 2024. Geneva: World Health Organization; 2024

[3] Kesharwani H, Mohammad S, Pathak P (September 02, 2022) Tuberculosis in the Female Genital Tract. Cureus 14(9): e28708. doi:10.7759/cureus.28708

[4] Nagpal A, Chaudhary P. Etiopathogenesis, diagnostic evaluation, and management of ovarian tuberculosis: A systematic review. Indian J Pathol Microbiol 2024;67:2-9.

[5] Sharma JB. Current diagnosis and management of female genital tuberculosis. J Obstet Gynecol India 2015;65:362-71.

[6] Leonardo Martinez, Olivia Cords, Qiao Liu et al. Infant BCG vaccination and risk of pulmonary and

extrapulmonary tuberculosis throughout the life course: a systematic review and individual participant data meta-analysis. Lancet Glob Health. 2022 September ; 10(9): 1-13

[7] J. Fortún,1, P. Martín-Dávila1 , R. Méndez1 et al. Infant BCG vaccination and risk of pulmonary and extrapulmonary tuberculosis throughout the life course: a systematic review and individual participant data meta-analysis. The Open Respiratory Medicine Journal, 2009, 3, 123-127

[8] Fortún J, Martín-Dávila P, Méndez R, Martínez A, Norman F, Rubi J, Pallares E, Gómez-Mampaso E, Moreno S. Ca-125: a useful marker to distinguish pulmonary tuberculosis from other pulmonary infections. Open Respir Med J. 2009 Nov 20;3:123-7. doi: 10.2174/1874306400900101 23. PMID: 19966922; PMCID: PMC2788741.

[9] Febriza A, Hatta M, Natzir R, Kasim VNA, Idrus HH. Activity of Antimicrobial Peptide; Cathelicidin, on Bacterial Infection. *TOBIOCJ*. 2019;13(1):45-53. doi:10.2174/1874091X01913010045

[10] Febriza A, Natzir R, Hatta M, Alam G, Kasim VN, Idrus HH. Curcumin effects in inducing mRNA gene cathelidicin antimicrobial peptide in Balb/c mice infected with Salmonella typhi.

[11] Kasim V, Hatta M, Natzir R, Hadju V, Febriza A, Idrus H. Effects of lime (Citrus aurantifolia) peel to the expression of mRNA toll-like receptors 4 in balb/c mice-infected Salmonella typhi. *J Adv Pharm Technol Res*. 2020;11(4):169. doi:10.4103/japtr.JAPTR_48_20

[12] Sunarno S, Puspandari N, Fitriana F, Nikmah UA, Idrus HH, Panjaitan NSD. Extended spectrum beta lactamase (ESBL)-producing *Escherichia coli* and *Klebsiella pneumoniae* in Indonesia and South East Asian countries: GLASS Data 2018. *AIMSMICRO*. 2023;9(2):218-227. doi:10.3934/microbiol.2023013