A Case Report: A Healthy Pregnancy Following Chemotherapy for Malignant Ovarian Tumour (Dysgerminoma)

Hamida Begum[1*], Ashrafi, F.,[2] Hasbullani Zakaria,[3] Nuraini Che Aziz, [4]

[1]Prof of Ob & Gynae, Widad University College, Kuantan, Pahang, Malaysia

[2]Specialist, Ob & Gynae, Brisbane, Queensland, Australia

[3]Biochemistry Department, Widad University College, Kuantan, Pahang, Malaysia

[4]Kulliyyah of Dentistry, International Islamic University, Kuantan, Pahang, Malaysia

***Corresponding Author*: hamida@widad.edu.my**

Abstract

Dysgerminoma, a malignant germ cell tumour of the Ovary develops in female girls and young women in 2nd or 3rd decade. Usually, it is diagnosed in the early stages of development (stage 1). Most of the cases are treated when comes at this early stage. Conservative surgery followed by chemotherapy is the treatment of choice, especially in young patients who are desirous for pregnancy. Response to chemotherapy is excellent and there is no fertility problem and less morbidity as well. The 5- year survival rate is > 75% when the tumour is limited to the ovary, even it is curable when diagnosed and treated in this early stage. Here is a patient who has normal pregnancy and delivery after she was treated with chemotherapy following conservative surgery with the diagnosis of Dysgerminoma.

Keywords: Dysgerminoma, malignant germ cell tumour

1.0 Introduction

Ovarian cancer is the 5th leading cause of cancer-related death in women (Penny, 2020). Though documented to occur in all age groups, it is usually a disease of postmenopausal and pre-pubertal girls. According to FIGO and WHO, germ cell tumours of the ovary constitute 5-10% of all ovarian cancers and dysgerminoma constitute 50% of all germ cell tumours. It makes up two-thirds of all malignant ovarian tumours in women younger than 20 years with a mean age of 22 years in 75% cases 1. Many of them produce biological markers like AFP, LDH, HCG, CA-125 and placental alkaline phosphatase which are used to diagnose it, to differentiate it from other types of tumours and used to monitor the response to therapy.

2.0 Case Summary and results

Mrs Marium, a 21-year-old lady, gravida two paras one, housewife attended gynaecology outpatient department of a referral hospital in Bangladesh with history of a lump in the lower abdomen, amenorrhoea for 4 months along with nausea, vomiting and abdominal distension after meal for the same duration. She was a normally menstruating woman with average flow and duration. She had no family history of breast, ovary, or colon cancer or cancer-related deaths. On examination, the uterus was found to be 16 weeks size and another palpable lump was found in the left lower abdomen about 12 times 12 cm, firm, non-tender with a well-defined margin whose overlying skin was free. And there was no ascites or palpable lymph nodes, vaginal examination revealed the same findings, and cleavage was found between the gravid uterus and the lump. Clinical diagnosis of 16 weeks pregnancy with left-sided solid ovarian tumour was made. Ultrasound showed 16 weeks of a viable intrauterine pregnancy with a loculated hypoechoic solid mass in the left adnexa. Tumour markers such as AFT, LDH, HCG and Ca-125 was done and results in higher comparable to malignancy was found.

After proper counselling laparotomy was done as a part of definitive treatment, where left-sided scalping-oophorectomy was done preserving right ovary and gravid uterus as it was then 17 weeks. Histopathology confirmed it was a case of dysgerminoma (figure 1). She was

then advised to attend a Cancer hospital where she received 6 cycles of combination chemotherapy after terminating a pregnancy by prostaglandin.

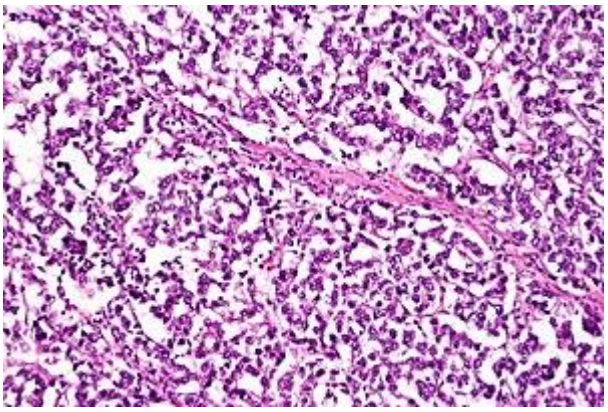

Figure 1: Histology Dysgerminoma: uniform cells resembling primordial germ cells separated by fibrous septa with lymphocytes.

3.0 Except for alopecia she had no other neurological like peripheral neuropathy/altered mentation (common side effects of chemo which she received) or any other serious effects.

She was under regular follow up for the next six months. She conceived after 7 months and was in regular antenatal check-ups. An abdominal scan at 20 weeks found everything normal. Seven days before the expected date of delivery (EDD) she was admitted with labour pain. Labour progress was recorded in partograph and after 7 hours she delivered a healthy male baby weighing 3.12 kg. She was discharged on next day with advice to come for follow up with ultrasound and serum alpha-fetoprotein marker. She was then clinically evaluated once every 2 months for the 1st year and every 6 months for the 2nd year. Now she is in yearly follow up and doing fine with no residual effects from tumour or chemotherapy.

4.0 Discussion

Dysgerminoma is one of the commonest malignant germ cell tumours of the ovary. It is the counterpart of seminoma in males which is highly sensitive to both radio and chemotherapy (Euscher, 2019). Typically, germ cell tumours are encapsulated at birth within the primordial follicle, if somehow, they escape encapsulation cell death usually ensues as no cellular context can provide normal contact inhibition resulting in germ cell tumour formation. All dysgerminomas are considered malignant but only one third behave aggressively. The exact aetiology of dysgerminoma has not been determined (Smith et al., 2006).

This type of undifferentiated germ cell tumour needs pre-operative karyotyping as 5% of all dysgerminomas are associated with genetic disorders. Dysgerminoma usually has a chromatin negative pattern. Macroscopically it is a solid tumour, rubbery in consistency and cut surface shows homogenous appearance. Microscopically it mimics that of primitive gonad; germ cells are arranged in bundles or alveoli with central nuclei surrounded by undifferentiated stroma. Lymphocytes may invade the stroma and their presence favours a favourable prognosis. Seventy-five (75%) per cent of ovarian cancer patients present in advanced stages III or IV but a few patients like our case present in the early stage along with other pathology. Typically, it develops as an insidious disease with few warning signs and symptoms. A history of non-specific gastrointestinal complaints like nausea, vomiting, dyspepsia, altered bowel habit and early satiety are the early symptoms. Abdominal distension due to ascites, urinary problems, rectal discomfort, bowel obstruction are features of late and advanced disease. With a few exceptions those who are fortunate enough present in this early stage of the disease. Our patient was symptomatic in the early stage, attended hospital, received modern treatment, and showed an excellent response. The treatment of choice includes removal of the tumour with a thorough exploration of other intra-abdominal organs and FNAC of the opposite ovary. Though sensitive to both radio and chemotherapy, radiotherapy is not given because of extensive destruction of soft structures like the liver, kidneys, intestine and bladder. Combination chemotherapy used are (1) Platinum-based drugs: Cisplatin or its newer analogue Carboplatin (2) Anthracycline antibiotics as Bleomycin (3): Plant alkaloid as Podophyllotoxin such as Taxol (Paclitaxel) or Docetaxel (Taxotere). Sometimes Etoposide also can be used.

5.0 Conclusion

Dysgerminoma though malignant germ cell tumour but early-stage diagnosis, early laparotomy, and histology, early starting of combination chemotherapy and critical systematic follow up can make the patient almost cure. So, conservative surgery with close clinical, radiological, and serological follow up has got paramount importance in making subsequent pregnancy successful.

References

Akram, M. S., Maryam, R., Khaled, M. E., Henry, B., Amr, M., Bryan, R. F., Elke, A. J., & Christine, O. M. (2014). Ovarian Malignant Germ Cell Tumors: Cellular Classification and Clinical and Imaging Features. *Radiographics*. https://doi.org/10.1148/rg.343130067

Boran, N., Tulunay, G., & Caliskan, E. (2005). Pregnancy outcome and menstrual function after fertility-sparing surgery for pure ovarian dysgerminoma. Archives of Gynaecology and Obstetrics; 271 (2): 104-108.

Chellam, V.G., Mathew, A., & Vargese, S. (1981). Unilateral Gonadoblastoma with Dysgerminoma, review and report of cases. *Indian journal cancer*;18(2):163-166

Euscher, E.D. (2019). Germ cell tumours of the female genital tract. *Surg Pathol Clin*;12:621–49.

Peel, K.R. (2008). Benign and Malignant Ovarian tumours. In: Keith Edmonds, editor in; Dewhurst's textbook of obstetrics and gynaecology, Oxford: Black Well Science Ltd;p.600-616

Penny, S.M. (2020). Ovarian Cancer: An Overview. *Radiol Techno*l.91(6):561-575.

Stagman, L.L., & Maizlin, I.I. (2018). Disparities in fertility-sparing surgery in adolescent and young women with Stage 1 Ovarian Dysgerminoma. *J Surg Res*: apr,224: 38-43.

Smith, H.O., Berwick, M., & Verschraegen, C.F. (2006). Incidence and survival rates for female malignant germ cell tumours. *Obstet Gynecol*;107:1075–85.