The Journal of
OBSTETRICS AND GYNECOLOGY of India

J Obstet Gynecol India Vol. 59, No. 5 : September/October 2009 pg 483-485

Case Report

A rare case of ovarian malignancy presenting as neurological paraneoplastic syndrome

Mundada Pravinkumar R [1], Yadav B Jeve [1], Patel Madhuri A [2], Purandare Chittaranjan N [4], Khadilkar Suvarna S [2], Khadilkar Satish V [3]

[1] Registrar, [2] Associate Professor, [3] Honorary Associate Professor, and Unit Head, [4] Honorary Professor and Unit Head

Department of Obstetrics and Gynecology, Grant Medical College, Sir J J Group of Hospitals, Mumbai.

Key words: paraneoplastic syndrome, cerebellar ataxia, ovarian malignancy

Introduction

Paraneoplastic syndromes are remote complications of systemic malignancy characterized clinically by subacute progression to profound neurological disability and pathologically by destruction of neurons with or without inflammatory response [1].

It is seen in 1-3% of all cancer patients. The most commonly associated gynecological malignancy is ovarian tumor. Its incidence in ovarian cancer is 0.1%. Onset of the symptoms may occur within or after 2 years of diagnosis of accompanying neoplasm. We are reporting such a rare case that initially presented with spino-cerebellar ataxia and vertigo and it was only after few months that an ovarian tumor was detected.

Case report

Mrs X, a 38 year old, non-diabetic, non-hypertensive woman was admitted in the Department of Medicine at St. George's Hospital Mumbai on 11th February 2004 with history of giddiness and ataxia since one month. Her symptoms aggravated over the period. Clinical examination revealed no focal neurological deficit. She was having peripheral vertigo.

CT scan and MRI of the brain showed no obvious pathology. She was discharged on 15th February, 2004 with the advice of regular follow up. On 27th February, 2004 she was admitted in the Neurology Ward of the hospital with the same complaints. She had truncal ataxia and limb dysmetria. She had frontal lobe dysfunction with decline in higher functions. She had occasional myoclonic jerks and extensor plantar. She had no vomiting, sensory complaint, and bowel or bladder dysfunction. There was no significant family history. She was thoroughly investigated to find out the cause of spino-cerebellar ataxia (SCA).

Investigations

VDRL & HIV tests were negative, and electrolytes and thyroid function tests were normal. Levels of vitamin B12 and vitamin E were normal.

Cerebrospinal fluid showed raised proteins with normal sugar and cytology.

Paper received on 11/10/2005; accepted on 02/03/2007

Correspondence :
Dr. Purandare Chittaranjan N
31-C, Dr. N A Purandare Marg
Mumbai - 400 007
Tel. 91-2-2361 8879, 2364 1004
Email : ranjanp@vsno.com

MRI with magnetic resonance angiography (MRA) was normal. Gliadin antibodies IgM and IgG – Negative Spinocerebellar ataxia gene (SCA) 1, 2, 3 and 6 was normal. Cytosine adenine guanine (CAG) repeated for SCA was found to be normal. Electro encephalogram (EEG) showed mild and intermittent disturbances of cerebral activity over either hemisphere. Focal epileptiform or focal slow wave abnormality was not seen. Sonography of the abdomen and the pelvis were within normal limits. Chest x-ray was normal.

The patient's differential diagnosis were sporadic degenerative disorder with spino-cerebellar ataxia, CJD and multisystem atrophy type C. The patient was discharged after a month.

The patient was readmitted in Neurology Department after 3 months with complaints of pain and swelling in the left lower abdomen for 10 days along with worsening of gait ataxia. Truncal ataxia was worse than limb ataxia.

Sonography of the abdomen and the pelvis showed 13x7 cm multicystic solid mass with thick septa within the right adnexa. Both the ovaries were not visualized.

CT of the abdomen showed abnormal cystic lesion in the left adnexal mass of 9x6.5 cm extending in the pouch of Douglas and having multiple septas within it suggesting malignant left ovarian mass. Serum CA 125 value of 387 IU favored the diagnosis of ovarian malignancy. Considering the presence of spino-cerebellar ataxia and ovarian malignancy clinical diagnosis of paraneoplastic cerebellar ataxia secondary to ovarian malignancy was made.

Exploratory laparotomy was done on 14th September 2004 under intratracheal anesthesia. Intraoperative findings were consistent with CT scan findings and were suggestive of advanced ovarian malignancy. The tumor in the left ovary along with the left tube were pulled over the fundus to the right side and were adherent to right ovary and uterus, hence the apparent disparity between USG and CT findings. The mass had cystic and solid consistency. Frozen section showed features of malignancy. Uterus and both adnexae were removed. Left obturator nodes were enlarged and hence removed. Omentectomy was done.

Postoperative period was uneventful. Systemic chemotherapy with injection cyclophosphamide and carboplatin was given in three cycles over a period of 21 days. After surgery the neurological signs and symptoms remained static. She was discharged on 20th October 2004. She was followed up regularly. At the last follow up on 7th February, 2005 the clinical picture of spino-cerebellar ataxia had neither worsened nor improved.

She had slurred speech and unable to walk independently.

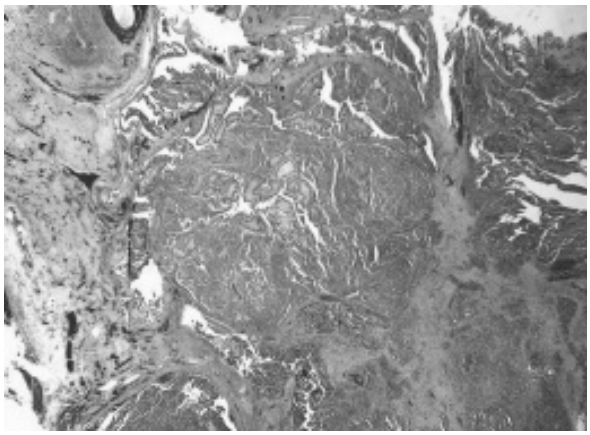

Figure1. Photomicrograph of poorly differentiated papillary cystadenocarcinoma of the left ovary. Stain used H&E, magnification, x40.

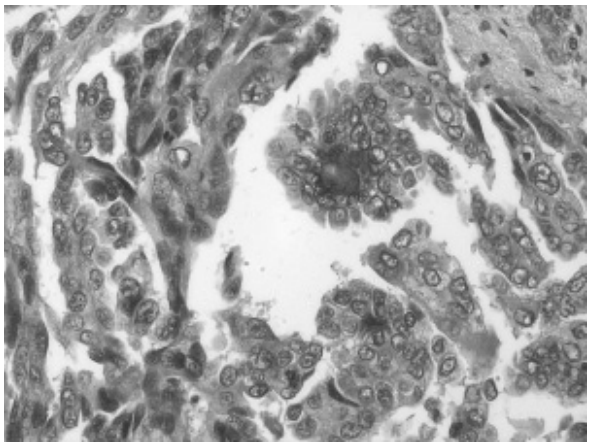

Figure 2. Photomicrograph of poorly differentiated papillary cystadenocarcinoma of the left ovary. Stain used H&E, magnification, x200.

Histopathological report of the tumor:

Poorly differentiated papillary cystadenocarcinoma of the left ovary with metastatic deposits in the broad ligament and omentum. Nodes were negative (Figure 1 & 2).

Discussion

Most common gynecological malignancy associated with PNS is ovarian malignancy. PNS can affect most organs and tissues[2]. It occurs because tumor secretes substances that mimic hormones or that interfere with circulatory proteins. Almost all paraneoplastic neurological diseases are immune mediated. It can affect any part of CNS or single area or single cell type such as Purkinje cells. There can be multi-level involvement e.g. encephalomyeloradiculitis.

Although tumor may be indolent, neurological illness develops rapidly over a period of few days to months. Paraneoplastic neurological diseases are usually severe, often, disabling and sometimes lethal[3]. Most important in the diagnosis of paraneoplastic syndrome is the detection of specific antibody in blood or CSF that reacts with both CNS and cancer tissue[2]. Presence of anti-Yo antibody in the serum of the patients with cerebellar ataxia is virtually a conclusive evidence of paraneoplastic cerebellar degeneration and gynecological, usually ovarian malignancy. Unfortunately not all patients with PNS have detectable / identifiable antibodies in their serum as in the present case. In such cases PNS is diagnosed on clinical correlations i.e. presence of neurological symptoms and evidence of ovarian malignancy.

Antibodies in paraneoplastic neurological disease reacts with portion of CNS that is responsible its clinical symptoms; e.g. Anti-Purkinje cell antibody (Yo-Antibody), occurs in patients with paraneoplastic cerebellar degeneration[4]. Exact mechanism of action is not yet understood.

There is no established protocol for treatment of the patient with PNS. Because PNS is considered to be immune mediated, two treatment approaches have been used; 1) removal of the source of antigen by treatment of underlying tumor and 2) suppression of immune response. In most cases the first approach is the only effective treatment[5,6].

Conclusion

This case has thrown light on the rare presentation of ovarian malignancy. Diagnosis of PNS requires a high index at suspicion, correlations and a battery of and investigations to rule out a primary etiology.

PNS involving CNS usually responds poorly to treatment, although they may be stabilized when underlying tumor is treated.

References

1. Darnell RB, Posner JB. Paraneoplastic syndromes involving the nervous system. *N Engl J Med 2003;349:1543-54.*
2. Moll JW, Antoine JC, Brashear HR et al. Guidelines on the detection of paraneoplastic anti neuronal specific antibodies. *Neurology 1995;45:1937-41.*
3. Croteau D, Owainati A, Dalmau J et al. Response to cancer therapy in a patient with paraneoplastic choreiform disorder. *Neurology 2001;57:719-22.*
4. Okano HJ, Park WY, Corradi JP et al. The cytoplasmic Purkinje onconeural antigen cdr2 down-regulates c-Myc function: implications for neuronal and tumor cell survival. *Genes Dev 1999;13:2087-97.*
5. Vigliani MC, Palmucci L, Polo P et al. Paraneoplastic opsoclonus-myoclonus associated with renal cell carcinoma and responsive to tumor ablation. *J Neurol Neurosurg Psychiatry 2001;70:814-5.*
6. Graus F, Dalmou J, Rene R et al. Anti-Hu antibodies in patients with small cell lung cancer: association with complete response to therapy and improved survival. *J Clin Oncol 1997;15:2866-72.*