

Anesthesia implications in emergency oncologic surgery in a case of untreated Parkinsonism

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ABSTRACT

Oncologic surgery has made tremendous advancements in the last two decades. The prognosis of once thought to be irreversible and incurable diseases has improved dramatically with these advancements, which have given a fresh lease of hope to the general population. But there are certain factors that are still unfavorable for achieving improved outcome of surgery in various cancers. The associated comorbid diseases do determine to a large extent the actual outcome of all the interventions to treat oncologic disease. The untreated coexisting disease makes the task of the attending anesthesiologist very challenging as numerous complications are anticipated, especially during emergency surgery. We are describing a case of a patient with endometrial carcinoma who presented with unstoppable bleeding per-vaginum and was suffering from Parkinson disease since 1½ years, for which no treatment was ever sought. Vaginal hysterectomy was performed under graded epidural anesthesia; and after a smooth and uneventful postoperative period of 8 days, she was referred to radiotherapy unit for further management.

Key words: Endometrial carcinoma, epidural anesthesia, L-dopa, Parkinsonism

INTRODUCTION

A tendency to delay the treatment of any illness till it acquires an acute discomfoting proportion is a common practice among majority of the population in our country, irrespective of caste, creed, religion or region. The delayed and incidental diagnosis of the malignant diseases projects one of the most common scenarios in our health sector. The malignancy usually compels the patient to seek medical advice only for some advanced clinical signs or symptoms. Gynecological malignancies are such a group of oncologic entities that are usually presented very late to the gynecological outpatient department (OPD). The educational level, lack of awareness, socioeconomic and many other factors play a significant role in seeking delayed medical assistance for any such oncologic illness. The presence of any untreated comorbid disease further adds to the challenge to the concerned clinician and the

anesthesiologist when such a patient presents for any type of surgical procedure. We are presenting such a case of a patient who reported to the gynecological OPD with multiple intermittent episodes of bleeding per-vaginum for the last 7 days with excessive bleeding for the last 1 day. She was suspected to be suffering from endometrial carcinoma, on the basis of clinical features and the radiological investigations. Coincidentally, she was diagnosed to have full-blown parkinsonian features for the last 1½ years, for which no medical treatment was taken till then.

CASE REPORT

A 66-year-old female patient was brought to the gynecological OPD by her relatives with chief complaint of intermittent bleeding episodes per-vaginum for the last 7 days with increased bouts for the last 1 day. On elicitation of past history, it was found that the patient used to have negligible locomotor activity and was virtually confined to bed for the last 3 years. She developed features of Parkinsonism 1½ years back, for which no medical assistance was sought by the patient herself or the relatives. Presently, going by her clinical history and examination, as well as the radiological examination of the abdomen, she was suspected to have an advanced stage of endometrial carcinoma with a possible erosion of some small-sized vessels in the endometrium, which possibly could have been responsible for bleeding.

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Pre-anesthetic evaluation revealed normal cardiac parameters, with a regular pulse rate of 86/minute, blood pressure of 124/78 mm Hg and no abnormal heart sounds on auscultation. We observed a respiratory rate of 16-18/minute and bilateral vesicular breathing on auscultation. The most striking feature on general physical examination was the presence of tremors in the forearm and hands with a greater involvement of the left side; as well as nodding of head in sitting position, which used to disappear on assuming supine posture. The laboratory values revealed hemoglobin concentration of 8.5 gm% and a normal profile for the rest of the investigations. She was advised L-dopa by the physician for the Parkinson disease, but her deteriorating clinical condition mandated an emergency surgery for the control of unstoppable bleeding. Therefore, it was decided to initiate surgery rather than waiting for the L-dopa to achieve its therapeutic levels for the control of Parkinsonism. She was administered tablet ranitidine 150 mg and tab alprazolam 0.25 mg as premedication 45 minutes before the surgery, along with tab L-dopa with a sip of water.

In the operation theater, a good intravenous (IV) access was secured, and preloading was done with 500 mL of ringer lactate solution. Monitoring gadgets were attached for heart rate, blood pressure, pulse oximetry and ECG, and baseline parameters were observed and recorded in sitting and supine positions. Epidural anesthesia was administered with 18G Touhy needle at lumbar L3-4 inter-space, and epidural catheter was secured at a depth of 4-5 cm in the epidural space. Three milliliters of 2% lignocaine hydrochloride with adrenaline was injected as test dose, and after 5 minutes 5 mL of 0.75% Ropivacaine was injected into epidural space. Another 5 mL and 2.5 mL of 0.75% Ropivacaine aliquots were injected in a graded manner, while regularly checking the sensory analgesic levels. During the perioperative period, mean blood pressure was maintained above 65 mm Hg with the help of mephenteramine infusion. One unit of blood was transfused intraoperatively to match the blood loss during surgery, and the entire procedure lasted for 2 hours. Total mephenteramine consumed during surgery was estimated at 24 mg, and postoperative analgesia was maintained with 6 mL of 0.2% Ropivacaine bolus infusions through epidural catheter. Epidural catheter was removed on the third postoperative day, and the patient was referred to radiotherapy center after the eighth postoperative day for further management.

DISCUSSION

Gynecologic surgery for endometrial carcinoma is itself a highly challenging task for the surgeon and the attending

anesthesiologist as many complications are anticipated during the surgical procedure.^[1] The presence of any comorbid disease adds further to these existing challenges. To add insult to the injury, the untreated coexisting disease makes the task of anesthesiologist very difficult, especially during any emergency surgery. Parkinsonism, commonly known as ‘the shaking palsy’, has been known since biblical times and has always been a challenge to the treating anesthesiologist whenever such a patient presents for any surgical procedure.^[2] Old age is a common denominator of Parkinsonism, and a prevalence of greater than 3% in the population of individuals aged >60 years is an established fact.^[3] The loss of pigmented cells of substantia nigra in basal ganglia and presence of eosinophilic ‘Lewy bodies’ is a hallmark of neurodegeneration in Parkinson disease. The neurochemical consequence of these pathophysiological insults is the depletion of neurotransmitter dopamine as a result of inhibition of enzyme tyrosine-β-hydroxylase.^[4] Clinically, the disease is characterized by classical triad of resting tremor, muscle rigidity and bradykinesia.^[5] Autonomic dysfunction is quite common in Parkinson disease and sometimes can present much earlier in the course of the disease.^[6,7] Dysautonomia is a major challenge to the anesthesiologist, especially if the patient is suffering from orthostatic hypotension and the presence of autonomic dysfunction mandates a thorough blood pressure recording in supine, sitting and standing positions.^[6,8]

L-dopa is considered to be the best form of treatment for established Parkinsonism, but it takes some time for the drug to fully establish its clinical effect.^[9,10] In the present case, since the surgical procedure was of an emergency nature, it was not feasible to wait for the complete optimization of the patient’s neurophysiological status. The decision for the emergency surgery was taken after elaborate discussion among the gynecologists and the anesthesiologists, and the pros and cons of surgical treatment and adequate treatment for Parkinson disease were thoroughly discussed.

Respiratory abnormalities have been described in Parkinson disease, and mostly they reveal a ventilatory obstructive pattern. In majority of the cases, such abnormalities are basically due to coexisting chronic obstructive pulmonary disease (COPD).^[11] Fortunately our patient did not reveal any such abnormal respiratory pattern. L-dopa is absorbed from the proximal gut and therefore rectal route is not helpful for the administration of the drug.^[12] We administered oral L-dopa 30 minutes before the start of surgery as it has a very short half life (1-3 hours), and we again repeated the dose 2 hours after the surgery with a sip of water.

The untreated Parkinson disease threw a big challenge for us in deciding the anesthetic technique — whether

to use general or regional anesthesia! As the surgery was in the infra-umbilical region, we preferred regional anesthesia. Graded epidural anesthesia was preferred over spinal anesthesia to ensure a stricter and better control of hemodynamic parameters. Secondly, regional anesthesia is preferred over general anesthesia (GA) as it avoids masking of the tremors by anesthetic drugs and non-depolarizing neuromuscular blocking drugs.^[13] Thirdly, postoperative nausea and vomiting (PONV) are better controlled with regional anesthesia as compared to GA as the emetic effect of general anesthetic drugs is avoided. The role of 5-HT₃ antagonist in oncologic surgery is well established, and we administered 100 µg of long-acting 5HT₃ antagonist palonosetron prophylactically for the control of PONV. Fourth, emergence from general anesthesia is associated with a variety of adverse events like hyperactive neurological reflexes, clonus, decerebrate posturing, shivering, rigidity, etc.^[14,15] Fifth, the inhalational anesthetics have a negative effect on physiological aspects of neuronal functioning, and halothane is supposed to sensitize the heart to a large extent.^[16] Sixth, intravenous anesthetics are also believed to exacerbate parkinsonian symptoms and exaggerated sympathetic response.^[16,17] Lastly, muscle rigidity and dystonia are associated with opioid use, which can accentuate the symptoms of Parkinson disease.^[18,19] We preferred to use Ropivacaine for epidural block because of a lesser propensity for cardiac toxicity and adverse neurological side effects as compared to bupivacaine.^[20,21] These medical challenges in oncologic surgery in the presence of co-morbid diseases will remain forever, as long as the mankind exist, and it is up to the medical fraternity to devise and invent techniques and drugs so as to deliver improved outcome in such patients.

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