

CASE REPORT

Unusual presentation of chronic myeloid leukemia – an emphasis on adequate preanesthesia work-up

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ABSTRACT

Regional anesthesia has become the primary anesthetic technique in management of trauma cases and is reported to have several advantages over general anesthesia. However, it is contraindicated in the presence of conditions associated with coagulopathy e.g. disseminated intravascular coagulation (DIC). While sepsis and trauma are more common causes of DIC, physicians must also be aware of rare causes like haematological malignancy.

Key words: Chronic myeloid leukemia; Disseminated intravascular coagulation; Brachial plexus block

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INTRODUCTION

Chronic myeloid leukemia (CML) is the commonest haematological malignancy encountered in clinical practice and is known for its variability in presentation.^{1,2} It may go unchecked due to oversight or by error and may lead to catastrophic consequences in surgical patients. We report an unusual presentation of CML and its anesthetic implication, with renewed emphasis on adequate preanesthesia evaluation of every patient.

CASE REPORT

A 45 year-old-male was admitted to the emergency unit with a swelling in the right upper limb following a road traffic accident one week earlier. He was initially treated in a private hospital and was referred to our hospital for further management. He had no other known comorbid illness. On examination, he was conscious and oriented, his weight was 52 kg. He was afebrile, pale with heart rate 96 bpm, respiratory rate 20/min and blood pressure 140/90 mmHg. He had a swelling in the right arm which was warm, soft, fluctuant and tender on palpation. Abdominal examination revealed hepatosplenomegaly. Cardiovascular and respiratory systems were unremarkable. Investigations revealed hemoglobin 6 g/dl, blood urea 28 mg/dl and

creatinine 1.1 mg/dl. Serum electrolytes and blood glucose were within normal range. Right upper limb radiograph was unremarkable and ECG showed sinus tachycardia. He was posted for emergency exploration of the swelling with two pints of blood at hand, after obtaining informed written consent with the rest of the investigation reports pending.

In the operating room intravenous access was secured in left forearm with a 16G cannula and after initiating standard monitoring, supraclavicular brachial plexus block was performed using peripheral nerve stimulator. Lignocaine 2% with adrenaline (5µ/ml) 10 ml and 10 ml of bupivacaine 0.5% were used to establish the block. Adequate anesthesia was obtained in 10 minutes. Right internal jugular vein was cannulated in first attempt. Intraoperatively the patient started to bleed profusely from the surgical site. The blood pressure dropped to 80 mmHg systolic. The surgeons packed the wound with Surgicel® (absorbable hemostatic agent) and pressure bandage and decided to abandon the surgery. The patient was resuscitated with crystalloids, colloids and fresh whole blood. Intravenous tranexamic acid and vitamin K were administered and patient was shifted to surgical intensive care unit. His vital signs remained stable in the postoperative period.

Consequences of unchecked CML

During the surgical procedure, coagulation profile reports arrived, which revealed the following;

- Prothrombin time (PT) 25.5/12.5 sec
- INR 2.08
- Activated partial thromboplastin time (aPTT) 55/30 sec
- Platelet count 217000 cells/mm³
- Total leucocyte count 403070 cells/mm³
- Peripheral smear: Anisocytic erythrocytes, leucocytosis with range of maturation of granulocytes and adequate platelets
- Differential leucocyte count: Neutrophils 31%, lymphocytes 0%, monocytes 2 %, eosinophils 0%, basophils 7%, myeloblasts 2%, promyelocytes 8%, myelocyte 28%, metamyelocytes 12% and band forms 10%

A provisional diagnosis of chronic myeloid leukemia with disseminated intravascular coagulation (DIC) was made and the patient was referred to the medical oncology unit for further management. However, treatment could not be continued as the patient got discharged against advice.

DISCUSSION

Regional anesthesia has become the primary anesthetic technique in management of trauma cases and is reported to have several advantages over general anesthesia.³ Most of the upper limb surgeries in our hospital are managed with peripheral nerve blocks. However coagulation profile is not done as a routine investigation in an emergency situation, where there is a paucity of time. In the developing countries, there is often an overload of cases for surgical procedures and limited availability of resources after routine working hours. The peripheral nerve blocks are contraindicated in the presence of coagulopathy and DIC.⁴ Vascular injury due to perforation of subclavian artery leading to haematoma formation thereby leading

to ischemic nerve damage, is a rare complication of supraclavicular brachial plexus block.⁵ We were fortunate not to injure the subclavian artery.

CML is a myeloproliferative disorder with median age of onset 50 years. Symptoms and signs usually develop insidiously and include fatigue, anaemia, progressive splenomegaly and leucocytosis.⁶ It has been reported that myeloproliferative disorders can present with thrombotic and haemorrhagic complications. The content and release of beta-N- acetyl hexosaminidase from platelets are altered in patients with CML and this is thought to be associated with thrombotic/haemorrhagic complications.⁷⁻⁹

While sepsis and trauma are more common causes of DIC, physicians must also be aware of rare causes like haematological malignancy.^{10,11} However, in our case with limited investigative resources available after routine duty hours a complete work up for a confirmatory diagnosis could not be performed as the patient sought discharge from the hospital.

CONCLUSION

Regional anesthesia has played an important role in perioperative medicine. However it is safe only when combined with appropriate technique, safe drugs, good skills and proper evaluation of the patient. Anesthetists need to be aware of rare causes of coagulopathy especially when central neuraxial blocks are planned in emergency cases, to prevent catastrophic complications. A high index of suspicion is required in such cases.

Quite often anesthesiologists are pressurised to induce cases without proper preanesthetic evaluation of the patient especially in emergency situations where services may not be available round the clock, and may result in undue morbidity and/or mortality. This situation must be avoided tactfully.

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