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Case Report

Retroperitoneal Hematoma Associated with Femoral Neuropathy: A Complication under Antiplatelets Therapy

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We report a case of retroperitoneal hematoma presenting as femoral nerve pulsy on antiplatelet therapy. The patient, a 78-year-old man who had undergone antiplatelet treatment using ticlopidine, was admitted to our hospital with complaints of sudden-onset low abdominal and back pain. Computed tomography showed an iso-density mass in the right retroperitoneum within the psoas muscle. We made a diagnosis of retroperitoneal hematoma compressing the femoral nerve and performed an operation to remove the hematoma in order to decompress the femoral neuropathy. Postoperatively, the patient rapidly recovered from the femoral neuropathy. In the particular case in which no antagonist against the ticlopidine is available, surgical decompression could produce a good outcome.

Key words: ticlopidine, retroperitoneal hematoma

With the increasing number of indications and patients treated with oral anticoagulants and antiplatelets, the number of haemorrhagic complications is also increasing [1]. The present case demonstrated a rare hemorrhagic complication, retroperitoneal haematoma associated with a femoral compression neurolopathy in a 78-year-old patient who had undergone antiplatelet treatment with ticlopidine. Although the association between femoral nerve pulsy and anticoagulant therapy, including heparin and warfarin, has been well-described [2-12], rertoperitoneal hemorrhage secondary to ticlopidine has so far not been reported. The present case showed typical manifestations of femoral nerve pulsy. This report may be significant and helpful for clinicians to become aware of such a rare complication as a differential diagnosis.

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Case Report

A 78-year-old man consulted our emergency room because of the sudden onset of low abdominal and back pain. He had a history of cerebral infarction in his 74-year-old. Since then, he had been given ticlopidine (300 mg/day) for following-up his cerebral infarction. Although some minimal neurological losses were found, he had been well before he came to us. Physical examination showed him to be 160 cm in height and 58 kg in weight. His blood pressure was 170/72 mmHg and pulse rate was 72/min. There was severe tenderness on palpation of the right lower abdominal quadrant and a 10 cm mass was felt. He could not support himself on his legs. Due to the restriction of movement of his hip joint, exact evaluation of the hip flexor weakness was impossible, though some loss was evident. He felt an analgesia

on the anterior aspect of the right thigh and held his right leg flexed in the hip joint. His ability to perform a knee jerk was lost, and weakness in the right quadriceps muscle was demonstrable.

Blood cell count and chemistry were unremarkable. Bleeding time was 4 min. Prothrombin time (PT) and activated partial thromboplastin time (APTT) was prolonged to 71% (14.1 sec) and 44 sec (control 25–35 sec), respectively. Plain abdominal X-ray demonstrated unclearness of the right psoas muscle line. Ultrasonography revealed a mixed echoic lesion within the right iliopsoas muscle. A needle aspiration under US guidance was performed and only 5 ml of bloody fluid could be withdrawn. Cytology of the aspirated fluid showed no abnormal cells. Computed tomography (CT) showed an iso-density mass in the right retroperitoneum within the psoas muscle (Fig. 1).

We made a diagnosis of retroperitoneal hematoma compressing the femoral nerve and performed operation to remove the hematoma for decompression of the femoral neuropathy. On laparotomy, a large retroperitoneal hematoma was found within the right psoas muscle which felt quite tense. The groove between the iliacs and psoas muscles was rather shallow, and the femoral nerve seemed to be compressed under the lateral margin of the strong psoas muscle. The fascia of the psoas muscle was incised and approximately 200 ml of the partially liquefied, partially clotted hematoma was evacuated from the muscle. The muscle fibers surrounding the hematoma were necrotic. The femoral nerve appeared intact. We removed the hematoma and performed drainage. Postoperatively, there was a rapid reduction of the paresthesia of the anterior surface of the right thigh. The patient was discharged 4 weeks after admission when he could walk and had could perform some active contractions of the right quadriceps muscle group after rehabilitation.

Discussion

Anticoagulant therapy is associated with a variety of hemorrhagic complications. Since Debolt and Jordan reported 2 cases of femoral neuropathy associated with retroperitoneal hematoma secondary to heparin anticoagulation [2], femoral compression neuropathy secondary to iliopsoas muscle hematoma has become well-known and an increasingly frequent problem because of the widespread use of anticoagulant therapy in ischemic and embolic disease. The incidence of retroperitoneal bleeding in patients treated with heparin for thromboembolic disease has been reported to be 6.6% [12]. And it has been said that iliopsoas muscle is predisposed to spontaneous intramuscular hemorhage [7].

Ticropidine inhibits platelet aggregation induced by adenosine diphosphate [1]. Antiplatelet treatment using ticropidine, due to its unequivocal benefit and relatively low risk, has become increasingly used for prevention of sudden cerebrovascular attacks, in cases of atrial fibrillation, in the treatment of thromboembolic disease, as part

Fig. 1 Computed tomography (CT) showed iso-density mass in the right retroperitoneum within psoas muscle.

of treatment after replacement of cardiac valves, and for other diseases [1].

Although most previously reported cases of retroperitoneal hematoma have been associated with anticoagulant therapy including heparin and warfarin [2-12], the relationship between retroperitoneal hematoma and anti-platelet therapy has never been described. In our patient, slight prolongation of PT and APTT was found preoperatively. Diseases such as liver cirrhosis and deficiency of coagulant factor can develop prolongation in PT and APTT, but in the present case none of these factors were recognized and the follow-up results of PT and APTT recovered to normal limits at 14 days after surgery. Therefore, ticlopidine may play some roles in the pathogenesis.

Femoral neuropathy can result from compression of the nerve by the psoas muscle hematoma within its fascial compartment. The femoral nerve is a branch of the lumbar plexus, originating from nerve roots L2 to L4. Following its initial course within the psoas muscle, the nerve emerges from the lateral side of the psoas muscle, where it comes to lie between the iliac and psoas muscle in a shallow groove. It passes into the femoral canal behind the inguinal ligament, covered by the poorly distensible fascia iliaca, where actual nerve compression occurs [3]. Due to the low blood supply of the nerve in this region, any compression would readly results in ischemic damage to the nerve [11]. Femoral neuropathy is characterized clinically by weakness of the ileopsoas, paralysis of the quadriceps femoris, pattelar hyporeflex, and hypoesthesia on the anterior aspect of the lower extremity [13]. The present case showed all of these symptoms, allowing us to make a diagnosis of femoral nerve pulsy easily.

The diagnosis of retroperitoneal hematoma is not difficult to determine. Computed tomography examination provided useful information regarding this complication because it can demonstrate the size and location of the mass and its relation to normal intra-abdominal structures. Ultrasonography can be helpful in retroperitoneal and pelvic masses if these masses are not located close to bone structures [8].

The treatment of retroperitoneal hematoma remains controversial. In some reports, surgical decompression has been adovocated as beneficial in minimizing neurological deficits [7-9, 11]. According to Butterfield *et al.* [14], unless decompression neurolysis is performed, a relatively high percentage of patients have residual disability with prolonged recovery time. They reported that only 2 among 10 conservatively treated cases experienced complete recovery from femoral neuropathy.

On the other hand, some authors have advocated a conservative approarch [15]. Non-operative management consists in immediate discontinuation and if necessary, the antagonization of the anticoagulant therapy. It has been reported that 68% (17 of 25) patients had a good outcome without surgery and that operative intervention would not improve the outcome significantly [15]. We agree that if the patient's condition would permit and if we have an antagonist for anticoagulant drugs, a careful wait-and-see approach can represent the most appropriate therapeutical choice. However, in regard to our patient, there has not been an available antagonist against the ticropidin, such as vitamin K for warfalin [1, 10]. In that case, surgical intervention should be performed. Percutaneous aspiration of the hematoma under US guidance should be attempted prior to any operative intervention [2]. However, once a clot is formed, as in our patient, an adequate decompression cannot be obtained.

In conclusion, we reported a case of retroperitoneal hematoma associated with femoral nerve pulsy during anti-platelet therapy using ticlopidine.

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