Journal Homepage: - www.journalijar.com

INTERNATIONAL JOURNAL OF ADVANCED RESEARCH (IJAR)

Article DOI: 10.21474/IJAR01/20144
DOI URL: http://dx.doi.org/10.21474/IJAR01/20144

RESEARCH ARTICLE

NEGLECTED SPINAL SUBDURAL HEMATOMA AFTER LUMBAR PUNCTURES FOR INTRATHECAL CHEMOTHERAPY, A CASE REPORT

Z. Benyaich, A. Jamaleddine El Idrissi, M. Amghar, N. Laffinti and M. Lmejjati
Departement of Neurosurgery, Faculty of Medicine of Agadir, Ibn Zohr University Agadir, Morocco.

Manuscript Info

Manuscript History
Received: 28 October 2024
Final Accepted: 30 November 2024
Published: December 2024

Key words:-
Spinal Subdural Hematoma, Intrathecal Chemotherapy, Cauda Equina Syndrome, MRI, Surgical Evacuation

Abstract

Spinal subdural hematoma is a rare complication of lumbar puncture. It could be overlooked with devastating neurological consequences due to a delay in diagnosis. We report the case of 18 years-old woman followed for leukemia who presented a cauda equina syndrome after lumbar punctures for intrathecal chemotherapy. The Magnetic Resonance Imaging showed a thoraco-lumbar spinal subdural hematoma. The treatment consisted on a surgical evacuation of the hematoma after L2 laminectomy. On follow-up, the patient did not improve significantly. This observation shows that haemato-oncologists should be mindful of subdural hematoma as a possible complication of intrathecal chemotherapy and confirms the severity of the prognosis for late surgery.

Introduction:-

Spinal intradural (subdural or subarachnoid) hematoma has been reported in the setting of lumbar puncture, spinal anesthesia and myelography [1]. Some underlying medical conditions are usually encountered in patients affected by this complication such as bleeding disorders, therapeutic anticoagulation or haematological malignancies. Wereport here an unusual case of a young woman with a chronic thoraco-lumbar spinal subdural hematoma as a result of intrathecal chemotherapy.

Case Report

A young woman of 18 years old with B-cell acute lymphoblastic leukemia was undergoing a part of the induction chemotherapy by receiving multiple intrathecal methotrexate injections when she experienced a low back pain and a weakness of her both lower limbs.

According to the patient, she started to feel that weakness few hours after the second lumbar puncture, and too days later she was no more able to stand up. Her symptoms were initially placed on the account of a deep asthenia and she received anyway a third and fourth lumbar puncture. A neurological worsening with urinary retention and anal incontinence marked the evolution.

On presenting on neurosurgical department, one month after the beginning of neurological symptoms, the examination found paraplegia with a motor strength of 0/5 in bilateral foot flexion and extension, and 1/5 in legs and thighs, with an important amyotrophy. The patellar and the ankle jerk reflexes were absent. The sensory testing found an anesthesia below the D12 level. She had also a bladder catheter because of the urinary retention. The

Corresponding Author:- Z. Benyaich
Address:- Departement of Neurosurgery, Faculty of Medicine of Agadir, Ibn Zohr University Agadir, Morocco.

magnetic resonance imaging (MRI) showed the appearance of a chronic subdural hematoma extending from T11 to L4 compressing the spinal cord with medullary suffering sign at T11-T12 level (figure 1).

Blood investigations, including platelet count, prothrombin time and partial thromboplastin time had normal finding at that moment. She had otherwise an anemia that needed transfusion. After correction of the full body count, the patient underwent L1-L2 laminectomy. After opening the dura mater that was tense and bluish in colour, a sero-hemic liquid was evacuated by aspiration and irrigation (figure 2). The patient did not improve postoperatively and died one month after because of multisystemic failure due to her disease.

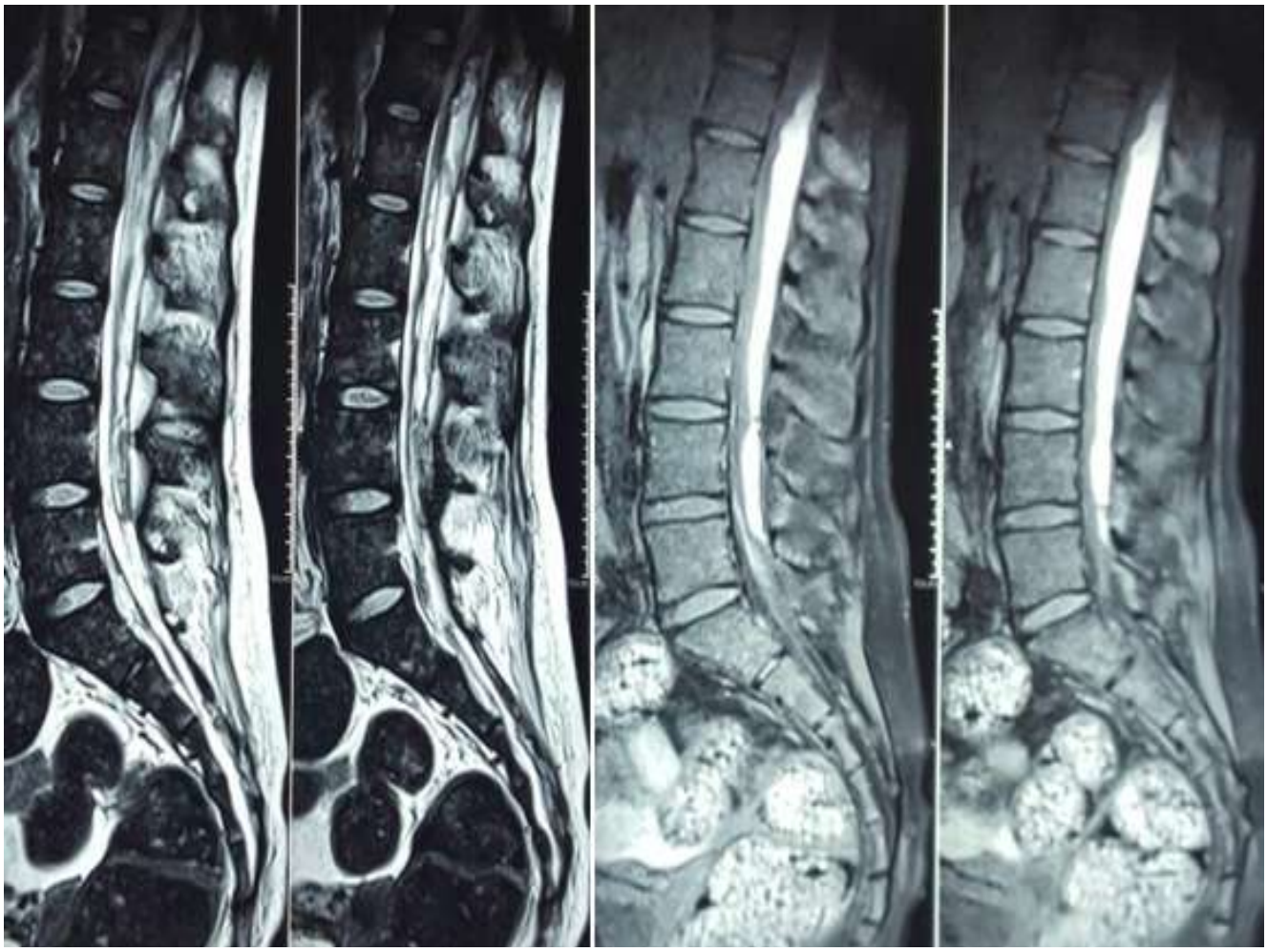

Figure 1:- STIR and T2 weighted sagittal MRI of the lumbar spine on sagittal showing chronic intradural hematoma extended from T11 to L5.

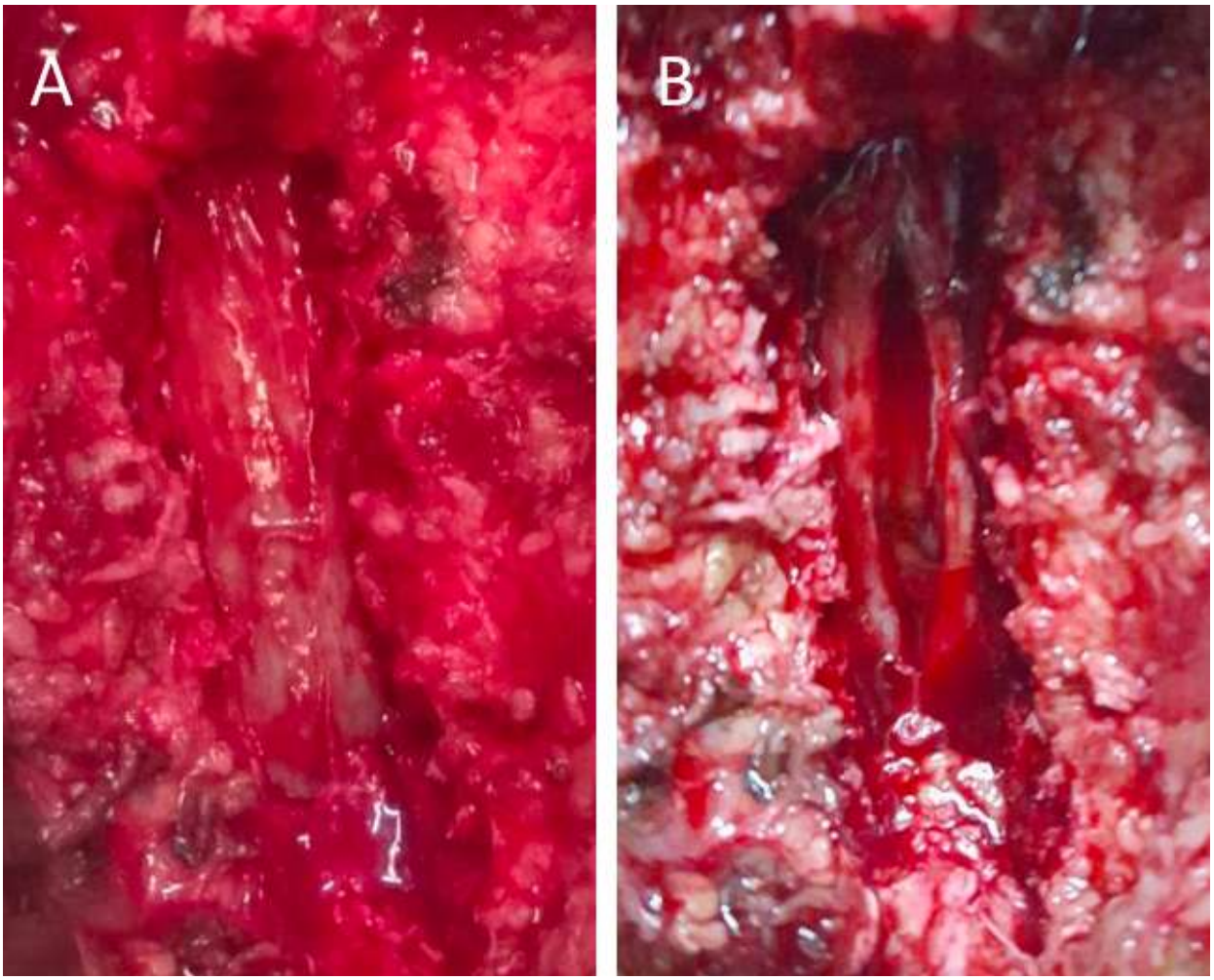

Figure 2:- Intraoperative view of the dural sac wish is tense and bluish (A), and the subdural hematoma after dura mater opening (B).

Discussion:-

Spinal subdural hematoma is a very rare and potentially serious neurological disorder. It has several aetiologies, such as spontaneous bleeding, trauma, coagulopathies, vascularmalformations, and iatrogenic hemorrhage during neuroaxialanesthesia or lumbar puncture (LP) [2].

LP has rare (0 to 1.87%) but serious complications, not taking into account local back pain and headache following such a procedure. These include both nonhemorrhagic (vertebral disc infection, spinal nerve root herniation, meningitis, and cerebellar tonsil herniation) and hemorrhagic complications (spinal subdural, subarachnoid, and epidural hematomas) [3, 4]. The unmodifiable risk factors for traumatic and bloody LP include black race, age younger than 1 year, a traumatic or bloody previous LP, performed within the past 2 weeks, and a previous LP performed, when the platelet count was 50 x 10°9/L or less. Modifiable riskfactors include a platelet count of 100 x 10°9/L or less, an interval of 15 days or less between LPs, and a less experienced practitioner [5]. Other potential risk factors include anticoagulant therapy, CNS pathology, and disseminated intravascular coagulation [3]. Concerning our patient, the main factors that might be responsible of the subdural hematoma are the iterative lumbar punctures and the coagulopathy due to her leukemia.

Our case illustrates the importance of being aware of spinal subdural hematoma as a possible and severe complication of lumbar puncture that can lead to permanent deficit or death if undiagnosed early. Once there is a suspicion for spinal hematoma, MRI should be considered the first-line diagnostic modality. Once the diagnosis is

confirmed, emergent neurosurgical consultation and eventually a prompt evacuation of the hematoma is crucial to maximize the chances of neurologic recovery [6].

References:-

1- D. Singh, M Chauhan, V Gupto, S Chopra, H Bagaria. Spinal subdural hematoma: a rare complication of spinal anesthesia: a case report. Turkish Neurosurgery 2008; 18:324-326.
2- Sandra L. Kopp, MD. Spinal Hematoma. Semin Pain Med 2004; 2:237-243.
3- Howard, S. C., A. Gajjar, R. C. Ribeiro, G. K. Rivera, J. E. Rubnitz, J. T. Sandlund, et al. Safety of lumbar puncture for children with acute lymphoblastic leukemia and thrombocytopenia. JAMA 2000; 284: 2222–2224.
4- Vavricka, S. R., R. B. Walter, S. Irani, J. Halter, U. Schanz. Safety of lumbar puncture for adults with acute leukemia and restrictive prophylactic platelet transfusion. Ann. Hematol 2003; 82:570–573.
5- Howard, S. C., A. J. Gajjar, C. Cheng, S. B. Kritchevsky, G. W. Somes, P. L. Harrison, et al. Risk factors for traumatic and bloody lumbar puncture in children with acute lymphoblastic leukemia. JAMA 2002; 288:2001–2007.
6- M. Myers, L. Meyers and W. A. Fink. Extensive subarachnoid and epidural hematoma after lumbar puncture. American Journal of Emergency Medicine 2015; 33:603.e3–603.e4.