

Intracerebral haematoma following spinal anaesthesia for caesarean section: case report

S. ULIVIERI, G. OLIVERI, S. DELL'ACQUA¹

SUMMARY: Intracerebral haematoma following spinal anaesthesia for caesarean section: case report.

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Several complications are known to occur with spinal anaesthesia and all of them are easily recognizable. We report the case of a 25 young old woman presenting an intracerebral hemorrhage secondary to spinal anaesthesia for caesarean section. She underwent surgical evacuation of haematoma with complete recovery. The literature about this matter is reviewed.

RIASSUNTO: Ematoma intracerebrale dopo parto cesareo in anestesia spinale.

S. ULIVIERI, G. OLIVERI, S. DELL'ACQUA

Sono note le complicazioni dell'anestesia spinale. Presentiamo il caso di una giovane paziente di 25 anni che, dopo parto cesareo in anestesia spinale, è stata sottoposta ad intervento neurochirurgico urgente per l'evacuazione di un ematoma intracerebrale secondario alla procedura anestesiológica. Una revisione della letteratura offre lo spunto per alcune considerazioni sull'argomento.

KEY WORDS: Caesarean section - Bupivacaina - Intracerebral haemorrhage - Neurosurgery.
Parto cesareo - Bupivacaina - Emorragia cerebrale - Neurochirurgia.

Introduction

Spinal anaesthesia for caesarean section has gained wide popularity. In a recent study, based on questionnaires sent to 220 randomized Departments of Anaesthesiology of Italian hospitals, the spinal anaesthesia has been practiced in around 26% of the caesarean sections, while data of the American College of Obstetricians and Gynaecologists and American Society of Anaesthesiologists show that 35% of all caesarean sections are performed under spinal anaesthesia (1) and this percentage is superior in UK and Ireland with values around 50% (2).

During the last years there have been increasing numbers of reports on complications after spinal anaesthesia recently called transient neurologic symptoms (TNSs). The most common include headache,

localized pain, numbness and sensory abnormalities, infection at the site of puncture, spinal extradural or subarachnoid haemorrhage (3), and exceptionally hearing loss, cranial nerve deficits, subtotal and extradural cranial haematoma (4, 5). In literature we found only two cases of intracerebral haemorrhages after caesarean section (6, 7).

Case report

Following an uneventful term pregnancy, a healthy 25 year old primigravida was admitted for selective caesarean section. The course of the spinal anaesthesia (2 ml of hyperbaric bupivacaine, spinal needle 25 Gauge, interspace L3-L4, no paraesthesia during the puncture and clear cerebrospinal fluid) was normal and the operation proceeded without problems with the birth of a 3240 g female without abnormalities and 9 Apgar score at the 5th minute.

Three hours after the conclusion of the operation, the patient had sudden headache followed by a sudden reduction of vigilance and finally left hemiparesis. An immediately computed tomographic revealed a large fronto-parietal hemorrhage with mass effect (Fig. 1). Cerebral angiography did not show any particular pathological sign.

The patient was operated the postoperative scan showed the complete evacuation of the hematoma (Fig. 2); intraoperatively no vascular malformation (aneurysm or arteriovenous fistulae) was found.

“Santa Maria alle Scotte” Hospital, Siena, Italy
Department of Neurosurgery

¹“Misericordia” Hospital, Grosseto, Italy
Department of Obstetrics and Gynaecology,

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Fig. 1 - CT scan shows the right fronto-parietal intracerebral haemorrhage.

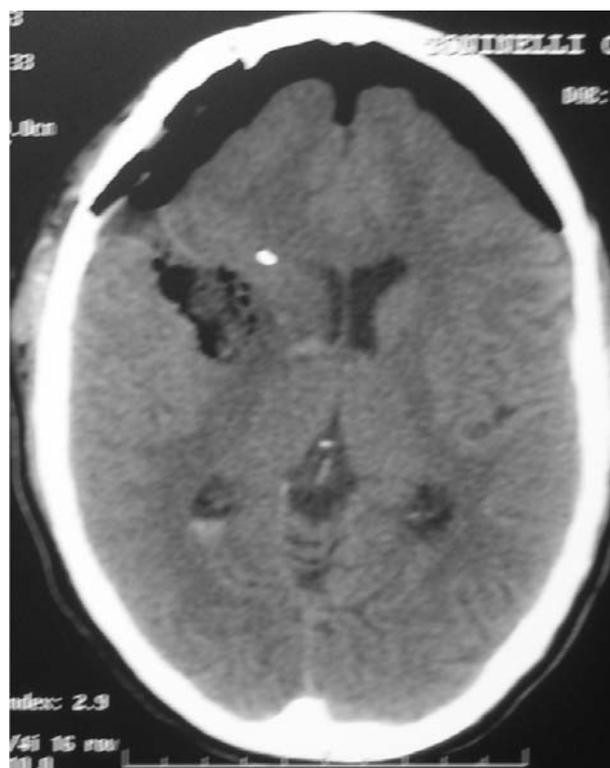


Fig. 2 - Postoperative CT scan shows the haematoma's complete evacuation.

Her postoperative period was uneventful recovering consciousness in the sixth day. Physiotherapy treatment started on postoperative day nine.

Clinical examination at 12 months showed the disappearance of the left hemiparesis. The patient was able to return to work 18 months after operation.

Discussion and conclusion

Reversible and persistent neurological complications after obstetric spinal anaesthesia are infrequently reported. In a recent review the incidence of neurological complications was estimated to be around 3,5% (8).

The mechanisms for the development of these

problems are only partly clarified. There is both clinical and *in vitro* evidence that pregnancy increases the sensitivity of the peripheral and central nervous system to general and local anaesthetics (9). Progesterone levels increase during pregnancy both in the cerebrospinal fluid and plasma. *In vitro* studies progesterone enhances the membrane depressant effects of bupivacaine, that seems to reduce the spinal cord blood, and thus increases the sensitivity to local anaesthetics of nerves isolated from pregnant animals (10).

We feel that the appearance of an intracerebral haemorrhage after spinal anaesthesia in a pregnant is not a casual event but we do not discuss the advantages of the spinal anaesthesia, i.e. absence of neonatal depression respiratory, less blood losses, better post-operati-

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