

# AnesthesiaDotCalm Newsletter

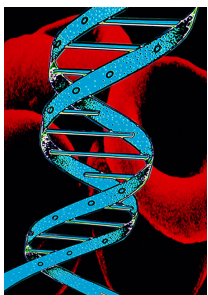


News You Can Use

May 1, 2007

## Thrombocytes and Spinal Anesthesia

The time has come to stop being so neurotic about the providing neuraxial anesthesia in patients with marginal platelet counts. The fear of producing paralysis has curtailed the use of a great anesthetic technique despite evidence that spinal anesthesia has been proven safe in patients who platelet counts are less than 100,000.



A study of over 5,000 lumbar punctures in children with acute leukaemia found no complications and 941 were performed when the platelet count was less than 50,000 per microLiter, and 170 when the platelet count was 10,000-20,000 per microLiter(1). These authors concluded that it was safe to carry out lumbar puncture without platelet transfusion when the platelet count is greater than 10,000 per microLiter. The study by Veen et al(2) substantiated this finding. Several studies provide evidence that thrombocytopenia is not a major contraindication to diagnostic lumbar puncture. Waldman et al(3) used a small (25-gauge) needle to administer morphine via a caudal block to 19 thrombocytopenic patients without neurologic complications. The patients' platelet counts were all below 50,000/ $\mu$ L. In a chart review of 2929 consecutive parturients Rasmus et al (4) reported that none of 14 thrombocytopenic women (platelet counts=15,000-100,000/ $\mu$ L) who received epidural anesthesia at the time of childbirth developed any problems. His review of the literature

found no cases of spinal or epidural hematomas in women giving birth. Hew-Wing et al(5) who after reporting on a case of a mother with unanticipated profound thrombocytopenia who received a continuous epidural anesthetic for labor and found no neurological sequelae or excessive bleeding occurred, reviewed the literature on the issue of epidurals and thrombocytopenia and could find no case report of a thrombocytopenic patient who developed a hematoma after epidural anesthesia. From March 1993 through February 1996, Beilin et al reviewed the charts of all parturients who had a platelet count  $<100,000$  mm<sup>-3</sup> during the peripartum period. Eighty women met this criterion. Of these 80, 30 had an epidural anesthetic placed when the platelet count was  $<100,000$  mm<sup>-3</sup> (range 69,000-98,000 mm<sup>-3</sup>), 22 had an epidural anesthetic placed with a platelet count  $>100,000$  mm<sup>-3</sup> that subsequently decreased below 100,000 mm<sup>-3</sup>, and 28 did not receive a regional anesthetic. They found no documentation of any neurologic complications in the medical records. and concluded that regional anesthesia should not necessarily be withheld when the platelet count is  $<100,000$  mm<sup>-3</sup>. (6) I know epidural hematoma is a complication which

we learn about early in our career and many of us spend a great deal of time fearing someday we will see one. Well here is a bit of information that may put your mind at ease. The actual incidence of epidural hematoma is really unknown! Most of what we know is based purely on case reports and the calculated incidence of spinal hematoma from these reports is less than 1 in 150,000 epidurals and less than 1 in 220,000 spinal anesthetics . For example, in a review of the literature from 1906-1994, Vandermeulen and associates identified 61 cases of spinal-epidural hematoma, 46 of which were associated with epidural anesthesia. Twenty three of the 46 epidural cases were associated with the use of anticoagulants, 4 were associated with thrombocytopenia and the remaining 19 cases had no risk factors reported. Five of these cases were in pregnant women. Two of these were reported to have thrombocytopenia, 1 had an epidural ependymoma and 2 had no identifiable risk factors. But in no instance had any of these patients received a spinal anesthetic(7,8,9).According to these authors, risk factors for epidural hematoma have included difficult or bloody tap, pre-existing coagulopathy and use of anti coagulants . By the way, the risk of a bloody tap in the obstetric population has been reported to be as high as 18%. which makes sense since the epidural venous plexus is enlarged during pregnancy. So the bottom line is this: thrombocytopenia may be considered a risk factor, but the platelet count below which it is risky to use regional anesthesia is still somewhat controversial. In the review by Owens et al., no patients were identified with hematoma despite having a platelet count >50,000 . So I think that in the absence of complicating factors such as a consumptive coagulopathy or in the presence of anticoagulants and when other coagulation studies are within well normal limits we need to stop obsessing over this issue of platelet count and give the patient a spinal anesthetic. I believe that majority of anesthesia practitioners agree that a well conducted spinal anesthetic mitigates the multiple hazards of general anesthesia in the pregnant population and provides the mother a better and more comfortable perioperative course.

References:

1. Howard SC, Gajjar A, Ribeiro RC, Rivera GK, Rubnitz JE, Sandlund JT, Harrison PL, de Armendi A, Dahl GV, Pui CH.Safety of lumbar puncture for children with acute lymphoblastic leukemia and thrombocytopenia. JAMA. 2000 Nov 1;284(17):2222-2224
2. Veen JJ, Vora AJ, Welch JC.Lumbar puncture in thrombocytopenic children. Br J Haematol, 2004: 127, 233-234
3. Waldman SD, Feldstein GS, Waldman HJ, Waldman KA, Allen ML.Caudal administration of morphine sulfate in anticoagulated and thrombocytopenic patients.Anesth Analg. 1987 Mar;66(3):267-268
4. Rasmus KT, Rottman RL, Kotelko DM, Wright WC, Stone JJ, Rosenblatt RM. Unrecognized thrombocytopenia and regional anesthesia in parturients: a retrospective review.Obstet Gynecol. 1989 Jun;73(6):943-946.
5. Hew-Wing P, Rolbin SH, Hew E, Amato D.Epidural anaesthesia and thrombocytopenia. Anaesthesia. 1989 Sep;44(9):775-7
6. Beilin Y, Zahn J, Comerford M.Safe epidural analgesia in thirty parturients with platelet counts between 69,000 and 98,000 mm .Anesth Analg 1997 Aug; 85(2):385-388
7. Owens EL et al. Spinal subarachnoid hematoma after lumbar puncture and heparinization: A case report, review of the literature, and discussion of anesthetic implications. Anesth Analg 1986;65:1201-1207.
8. Vandermeulen EP et al. Anticoagulants and spinal epidural anesthesia. Anesth Analg 1994;79:1165-77.
9. Horlocker TT, Wedel DJ; Honorio B; et al. Regional Anesthesia in the Anticoagulated Patient: Defining the Risks (The Second ASRA Consensus Conference on Neuraxial Anesthesia and Anticoagulation) ,Regional Anesthesia and Pain Management, Vol28/3,2003, pp172-197