Can the histological changes and inflammatory response in meninges caused by spinal block through tattooed skin progress to adhesive arachnoiditis ? An experimental model in Rabbits.

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Background and Goal of Study

The intrathecal injection of saline through a needle inserted through tattooed skin was capable of producing histological changes over the meninges of rabbits 6 months after lumbar puncture in a previous research¹. The purpose of this study is assess if the inflammatory response in meninges caused by spinal block through tattooed skin of rabbits appearing early, if is progressive and if develop to adhesive arachnoiditis

Materials and Methods

Fourty two young male adult rabbits were divided by lot into 3 groups as follows:

GI: spinal puncture through tattooed skin and saline injection, captivity for 30 days

GII: spinal puncture through tattooed skin and saline injection, captivity for 360 days

GIII: spinal puncture through non tattooed skin and saline injection, captivity for 30 days.

The subarachnoid space was punctured at S1-S2 under ultrasound guidance with a 22-gauge 2½ Quincke needle. After the period of captivity all animals were killed by decapitation to avoid cellular death. The lumbosacral spinal cord portion was removed for histological analysis using hematoxylin-eosin stain.

Results and Discussion

None of the animals for the control group (GIII) shows signs of injuries to meninges. After 30 days of spinal block through tattooed skin, 78,5% of the animals for GI shows signs of perivascular lymphoplasmacyte infiltration in the pia matter and arachnoid (leptomeninges). And after 360 days, 92,8% of the animals from GII showed inflammatory infiltration and areas of adherence in the leptomeninges, changes compatible with arachnoiditis.

CONCLUSION

On the basis of the present results, intrathecal injection of saline through a needle inserted through tattooed skin is capable of producing histological changes and inflammation over the meninges of rabbits. Some changes are compatible with ARACHNOIDITIS

¹.Does spinal blockade through tattooed skin cause histological changes in nervous tissue and meninges? An experiental model in rabbits. Regional Anesthesia and Pain Medicine, v. 40, p. 533-538, 2015.