

Novel device for sealing perforations following dural puncture

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ABSTRACT

Unintentional dural puncture can lead to post-dural puncture headache. Garcia-Vitoria et al examined the efficacy of a new device that allows sealing a dural puncture. The authors performed their study on an animal model and found a reduction in cerebrospinal fluid (CSF) leak in the group of sheep that received the intervention. This device may be potentially tested in humans to examine their efficacy in reducing CSF leak in human subjects who may have a dural puncture.

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- García-Vitoria C, García-Rosselló M, Reina M, et al. Validation of a bioabsorbable device that seals perforations after Tuohy needle dural puncture in an ovine model. *RAPM*.

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A novel device for sealing perforations following dural puncture

An interesting study by Garcia-Vitoria et al examined the efficacy of a new device in sealing perforations following dural puncture in an animal model. The hypothesis is that device will reduce Cerebrospinal fluid (CSF) leakage if unintentional dural puncture occurs (1).

Design

Device structure

Structure of the terminal piece

Figure 2: Implant deployed. a = the terminal end of the barbed thread has been modified to be wider in diameter than orifice in the patch to anchor it into the patch; b = the first millimeter of the thread is devoid of spines; c = implant; d = cannula positioned at tip of Tuohy

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García-Vitoria C, García-Rosselló M, Reina M, De Andrés J, Gutiérrez Bautista A, Esteve-Bernet V, Boezaart A, Redondo-García J. Validation of a Bioabsorbable Device that Seals Perforations After Tuohy Needle Dural Puncture in an Ovine Model. dx.doi.org/10.1136/rapm-2020-102225.R1

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Forty six Anesthetized sheep were studied in a single blind randomized controlled fashion

They were divided into 2 groups, all received a dural punctures, followed by injection of contrast. Twenty three animals received the intervention.

CT scan was then used to detect contrast leakage in both groups.

Investigators indicated less leak in animals that received the intervention using the sealing device.

Conclusion

Device is possibly an effective way of preventing CSF leak if applied immediately after dural puncture.