

Sterile water injections as a method to alleviate birth pains

Sorzabalbere A.⁽¹⁾, Garitaonandia A.⁽²⁾, Mainar G.⁽³⁾, Sáinz de la Maza L.⁽⁴⁾

(1) Hospital Universitario Donostia, Begiristain Doktorea Pasealekua, 117, 20080, Donostia (Spain); (2) Hospital de Mendaro, C/ Mendarozabal, s/n, 20850, Mendaro, Bilbao (Spain)
(3) Hospital Clínico Universitario Lozano Blesa, Avd. San Juan Bosco 19, 50009, Zaragoza (Spain); (4) Centro de Salud J. Saenz de Buruaga, C/ Henao 7-9, 48009, Bilbao (Spain)

Introduction

Back pain during labour is among pregnant women's main concern. During the last years several technics and methods based on the application of drugs have been proposed to alleviate birth pains. However, these methods are not completely side effects free. Conversely, **subcutaneous injections of sterile water** in the skin can be a suitable alternative to alleviate back pain during birth labour of those pregnant women that do not want medications. During labour, some women have a pain in the uterus or in the pelvis while others have pain in their back. The injections of sterile water around the **rhombus of Michaelis** have proven to be very effective in the last situation

Where is the Rhombus of Michaelis?

It is a rhombus-shaped anatomical contour located near the sacral area (lower human back; **Fig. 1**). The upper corner or vertex corresponds to the Spinous process of the 5th lumbar vertebra, the lateral corner corresponds to the posterior superior iliac crests and the lower corner to the intergluteal space ⁽¹⁾.

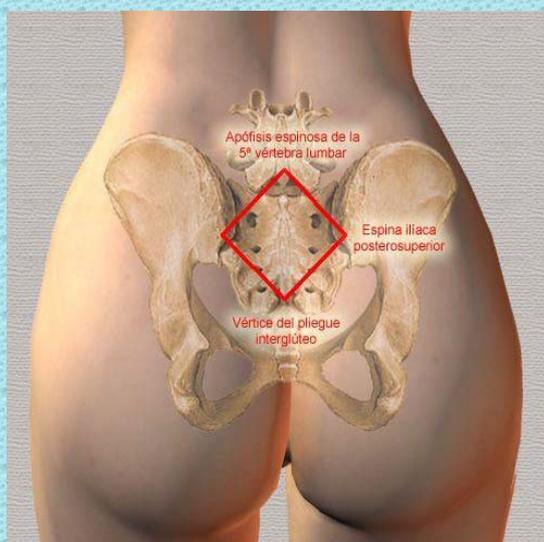


Fig. 1. The rhombus of Michaelis. (courtesy of Medicopedia, Rombo de Michaelis; Organización Médica Colegial de España). <http://www.iqb.es/diccio/r/images/rombomichaelis.jpg>

How does the sterile water injection works?

Treatment consists in the intradermal or subcutaneous injection of ca. 0.1 to 0.5 ml of sterile water in four points of the skin in the sacral area using as a reference the rhombus of Michaelis. The subcutaneous injection is preferred over the intradermal because its application is less painful. The injections are as follows (**Fig. 2**):

- Two injections in the posterior superior iliac crests.
- Two injections 2-3 cm under and 1-2 cm medial the previous ones.

The best moment for the injection is during the uterine contraction and application time should be around 20-30 secs ideally (sometimes help from another person will be required). The reason for this procedure is because may alleviate the pain of the injection. The correct location of the rhombus of Michaelis and the injection points may increase the success of the technique^(2,3).

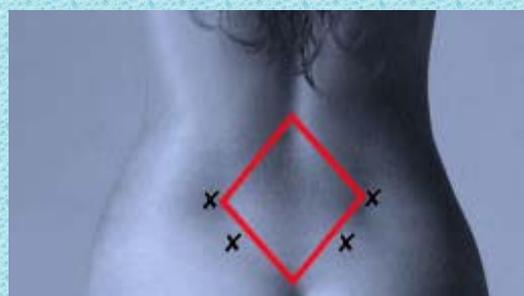


Fig. 2. Injection points for sterile water shot. (courtesy of <https://www.todopapas.com/embarazo/parto/inyecciones-de-agua-esteril-en-el-rombo-de-michaelis-5808>)

The alleviation of pain

Just after the subcutaneous injection of sterile water in the skin there is a pain or a reaction that can last for around 30 secs. This pain goes down gradually. Simultaneously, the back pain caused by the uterine contractions goes down. The alleviation of pain is very fast and can last for around 2 or 3 hours ⁽²⁾.

Conclusions

Since the end of the 19th century, the subcutaneous injection of sterile water in the skin has been used as local anesthetic technique in minor surgery and to alleviate knee pain and the pain associated to nephritic colic. In obstetrics, this technique started to be used in the Nordic countries during the 20's⁽⁴⁾.

It is a technique easy to achieve and cheap that has no side effects excluding the pain associated with the injection.

Bibliography

- Smith Agreda V., Vallalain Blanco D., Mainar García A. Anatomía topográfica y actuación de urgencia. 1ª ed. Barcelona. Paidotribo; 2005.
- Hutton EK, Kasperink M, Rutten M, Reitsma A., Wainman B. Sterile water injection for labour pain: a systematic review and meta-analysis of randomised controlled trials BJOG: An International Journal of Obstetrics & Gynaecology 2009; 116(9): 1158-1166.
- Sociedad Española de Ginecología y Obstetricia SEGO. Protocolos: analgesia del parto (2008). Disponible en: <https://www.elpartoestuestro.es/recursos/sego-protocolo-analgesia-parto-2008>
- Burton C. Instrumentation for dorsal column stimulator implantation. Surg Neurol 1974;2(1):39-40.666