

## INSIGHTS INSIDE THE FOALING MARE: AN ANIMATED TOOL FOR VETERINARY EDUCATION

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Equine obstetrics presents a complex and challenging knowledge domain to both breeders and veterinarians. The foaling process is usually swift and smooth. Abnormal conditions require efficient diagnostic and intervention skills and the mastery of a broad knowledge base in order to explain and handle emergency situations (Schmid et al. 1994).

Due to the seasonality in breeding management, obtaining experience without a good initial insight into the different possibilities of dystocia, with its inherent three dimensional aspects, is difficult. Previous experience in bovine obstetrics is very helpful to get sufficient skills in intra uterine manipulations, especially since only small numbers of obstetrical cases in horses impedes winning experience (Schmid et al. 1994, Frazer 2002). The high costs of veterinary training also constrain the chances to maintain equality of training levels through the world (Rodriguez-Martinez 2004).

Nonetheless, there is a need to gain more experience and an increased exposure to routine cases in theriogenology work, especially in large animal species since this represents a significant portion of practice activities. Especially dystocia management is a high priority in a day to day large animal practice (Kustritz et al. 2006). Providing possibilities to ameliorate education in equine obstetrics might be part of a solution to deliver tools for (distance) learning without the increase of experimental mares to exercise upon (Einstein 1997).

In human medical education, several multimedia applications (animated movies, virtual reality simulations

(McDougall et al. 2009)) and simulation dummies (Daniels et al. 2010), even computer-guided dummies (McDougall et al. 2009), are available and become more and more realistic (Ennen and Satin 2010). In veterinary medicine, due to smaller numbers in students and differences in budgets, unfortunately, such tools are rare (Frey et Paschmionka 1996, Bossaert et al. 2008). Although the use of dummies might give a more realistic impression to students, cost of those tools are limiting the success and user-friendliness in an educational setting.

The former has inspired the FoalinMare project that has resulted in the development of a multimedia package that introduces learners to equine obstetrics. Using a computer-aided design of an anatomic model of a pregnant mare, artists created countless images for each sequence of the pathways of parturition in the mare. All details thus captured were checked by renowned specialists in equine obstetrics, and scientific considerations prevailed in the design. Besides the animation of the normal birth process, many other animations of malpostures, malpositions and pre- and post partum complications, were made. The three dimensional animated movies come along with voice-overs in different languages.

In view of the limited teaching time, the integration of such multimedia applications in the curriculum of veterinary students and veterinarians in general, will improve medical knowledge about diagnosis and management in equine obstetrics as has been shown with a similar educational project in human medical education (Hamptom and Sung 2010).

The aims of the project are to give more insights in the foaling process as well in all manipulations that have to be performed when correcting a malposture or malposition.

As such the project has the intention to help in diagnosing and treating dystocic conditions in the mare. Giving students more insights in this domain will enhance the learning process and assuring that competences and skills can be easily acquired.

The results illustrate the significant impact of multimedia usage on knowledge and skills acquisition and on a reduction of cognitive load.

Given the experimental design in which 4 types of instruction were contrasted, the results also point at the critical need to support the DVD usage with clear



guidance in view of acquiring the related complex knowledge and skills.

In this lecture some of the important principles of equine obstetrics that might benefit from a more illustrative way of education are shown and discussed.

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