

Left thoracic duct in donkey

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Thoracic duct is a duct that drains the lymph from the cisterna chyli into the venous angle of the cranial vena cava. The thoracic duct in the horse is situated on the right side (Getty 1975; Nickle et al. 1981), but in rare cases the thoracic duct has been reported (Nickle et al. 1981; Gilanpour et al. 2005).

In this case the course and position of the thoracic duct in donkey seems to be similar to the horse. In this case the thoracic duct originated from the cisterna chyli passed through the aortic hiatus of the diaphragm and enters to the thoracic cavity. It was situated on left of the median plane on the dorsal aspect of aorta. The thoracic duct was totally on the left side in its course. At the level of fifth thoracic vertebra it inclines ventrally to the left of esophagus. Finally it entered in to the origin of the cranial vena cava at the jugular venous angle. Regarding the anatomical similarity of equine it seems that existence of left thoracic duct in donkeys maybe considered as a rare case.

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A comparison of the *in vitro* effect on *Bulbine frutescens* and *natalensis* on dermal fibroblasts and epidermal keratinocytes: implications for wound healing

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In recent years, there has been a growing interest in natural and traditional medicines for the treatment of wounds. The use of such medicinal plant extracts has arguably been based largely on historical or anecdotal evidence, since there is relatively little scientific data supporting these claims. Attempts to find agents that promote wound-healing and that are affordable, effective and non-toxic have a long history. In South Africa, hundreds of different indigenous plants are used to treat wounds and burns. The merits of relatively few of these have been scientifically evaluated. One plant, indigenous to only southern Africa and widely used as a skin remedy is *Bulbine* of the Asphodelaceae family van Wyk and Gericke (2000). The leaf of this plant are filled with a clear gel similar in appearance and consistency to the *Aloe vera* gel. The gel of several species of *Bulbine* is commonly used by both traditional healers and the local population for the treatment of wounds, burns, rashes, itches, ringworm, cracked lips and herpes, and is applied directly to the skin or used in the form of a warm poultice (Hutchings et al. 1996). This study aimed to investigate the effect of *Bulbine frutescens* and *Bulbine natalensis* on normal human dermal fibroblasts and keratinocytes. – two cell types that are integral to the wound healing process in skin: keratinocytes contribute to wound closure by proliferating and epithelializing the wound area (Xue et al. 2004) while fibroblasts stimulate collagen production resulting in wound contraction.

Both cell lines were cultured under standard conditions using Iscove's Modified Eagles Medium (MEM) for the fibroblasts and Dulbecco's MEM for the keratinocytes. Cells were seeded into 96 well plates and once confluent, were treated with vary-

ing concentrations of the leaf extract of *B. frutescens* and *natalensis*. These cultures were then subjected to MTT, WST-1 and BrdU tests to determine the cytotoxicity and proliferation effect of the extracts. The effect of the extracts on cell migration was tested using the 'scratch assay'. In addition, migration of cells across a score was analysed over a 48 hour period

Cell proliferation was present at all concentrations of *B. frutescens* and *natalensis*. Proliferation in the treated cultures was significantly greater than control cultures at concentrations of 0.1-5 and 100-300 µg/ml for *Bulbine natalensis* and at concentrations of 0.1-10 µg/ml for *Bulbine frutescens*. Both extracts exhibited no cytotoxicity. The average time to close the 'score' was 37, 46 and 48 hours for the *Bulbine natalensis*, *Bulbine frutescens* and the control cultures, respectively.

These findings have important implications for the use of these extracts to treat wound healing. The *in vivo* effect of the extracts has been tested on an animal model and the histology assessed.

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Anatomo-histological analysis of the juncturae and their relations to the extensor tendons to the dorsum of the hand

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The extensor digitorum communis (EDC) tendons emerge through the fourth dorsal component onto the dorsum of the hand, they are together distally by an oblique interconnections, juncturae tendineum (JT). The JT may play coordination of extension of hand, force redistribution, stabilization of the metacarpophalangeal joint.

The JT were studied for gross appearance, size, shape, thickness, location and distribution with the dorsum of the hand in fifty-four cadavers. The JT were recorded to the adjacent tendons of origin and insertion, the distance from the radiocarpal joint, and by the intermetacarpal (IMC) space. The first IMC space was defined as the space between the metacarpals to the thumb and index fingers, and second, third and fourth spaces were between the index and long, long and ring, ring and small fingers, respectively. Measurements for the morphological different types of JTs were recorded to the nearest 0.01 mm and were statistically analyzed using Student's t test. After standart tissue processing, the sections were embedded in paraffin and cut at 5µ thickness to the JT stained with hematoxylin-eosin and Masson trichrome.

The JT were identified into three groups their anatomo-histological features. The JT type 1 was consisted of filamentous regions within the intertendinous fascia that contained tiny bands of connective tissue. It was found primarily between EDC tendons to the index and middle fingers and between the tendons to the middle and ring fingers. This type of JT was observed present in 57.4% cases in the second IMC, in 16.7% cases in the third IMC and 1.8% cases in the fourth IMC space. The JT type 2 was found thicker than type 1 JT, yet thinner than type 3. This type of JT was detected present in 3.7% cases in the second IMC, 59.3% cases in the third IMC and in 7.4% cases in the fourth IMC space. The JT type 3 is described the longest and thickest of the three types. Type 3 JTs were subclassified into two subtypes as "Y" and "r" depending on their appearance. The type of 3Y was accounted for 14.8% JT in the third IMC space and 53.7% JT in the fourth space. The type of 3r was detected present in 5.55% cases in the third IMC and in 37% cases in the fourth IMC space. In histologic examination, the fibers of Types 1 and 2 JTs were straight. In Type 3 JTs were composed of regularly oriented parallel and crosswise bundles of tendinous tissue.

This study is important in terms of giving accurate knowledge on the anatomo-histological analysis of the JTs and their relations to the extensor tendons to the dorsum of the hand. Difference of histological features of the JT were not described in the classification of previous studies of JTs. An understanding of the structures of the JT and interactions between the