LONG-TERM EFFECTS OF THE IMPLANTATION OF DIFFERENT TYPES OF SUTURES IN THE SUBCUTANEOUS ADIPOSE TISSUE OF RATS

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Traditionally, manufacturers of suture materials claim that their maximum thread safe, inert and absorbable ligature even absorbed in tissues with no side effects. However, the scientific evidence relating to long-term effects and possible complications developing after the use of various types of ligatures in the literature is not enough.

By light microscopy, studied the reaction of the surrounding tissue to the implantation of absorbable sutures (threads simple catgut, polydioxanone (Surgikrol)) and non-absorbable (ligatures prolene 3/0) in the subcutaneous fat of male rats at 12 months. Each group had at least six animals.

The results obtained. 1 year after implantation, the implantation of a place managed with difficulty to detect macroscopically in four animals of 6 implanted catgut, one animal with an implanted Surgikrolom and all animals implanted with prolenom.

Microscopically, in the case of catgut one animal was found non-resorbed fragment ligation (Figure 1). The rest was determined perifocal sclerosis with foci of scarring, sclerosis of the vascular walls, sclerosis and degeneration of peripheral nerves (Figure 1).

An animal with an implanted thread Surgikrol zone implantation residues ligatures were found, around determined thickening due to the expressed sclerosis vascular walls, sclerosis of the peripheral nerves and soft tissues (Figure 2).

In animals with implanted Prolene ligature preserved. Around determined pronounced sclerosis, until soft tissue scarring, nerve trunks sclerosis and vascular walls (Figure 3-4).

Thus, none of the modern suture can not be absolutely inert and safe. Catgut filaments may persist for a long time in the body, causing chronic inflammation and sclerosis. Their biodegradation almost always incomplete regeneration of the surrounding tissues. Surgikrol considered to be fully biodegradable ligature, but the experimental data indicate that its use can lead to incomplete regeneration of the surrounding tissues with the development of sclerotic changes (substitution). Long-term presence in the body shed leads to the development of gross scarring of the surrounding tissues. In turn, incomplete regeneration of tissue may cause malfunction of organs and tissues [1, 2]. We believe that clinicians desirable to consider the above evidence, and not just promotional offers firms.

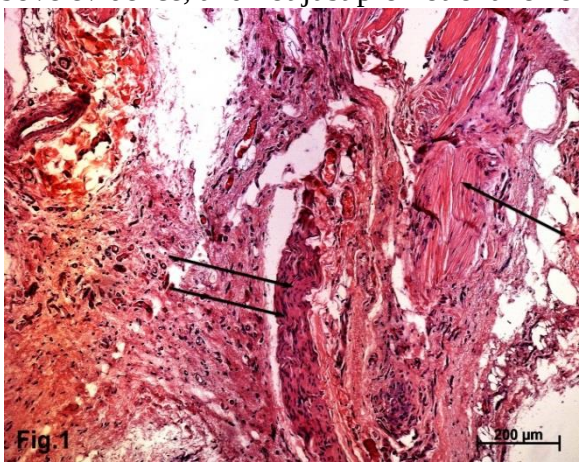

Fig. 1: One arrow Set surviving fragment of catgut, two - a nerve with signs of multiple sclerosis

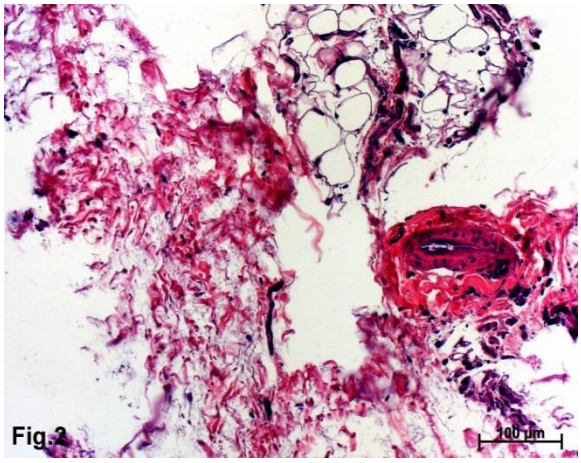

Fig. 2: Area Surgikrol implantation. Sclerosis vessel wall and soft tissues

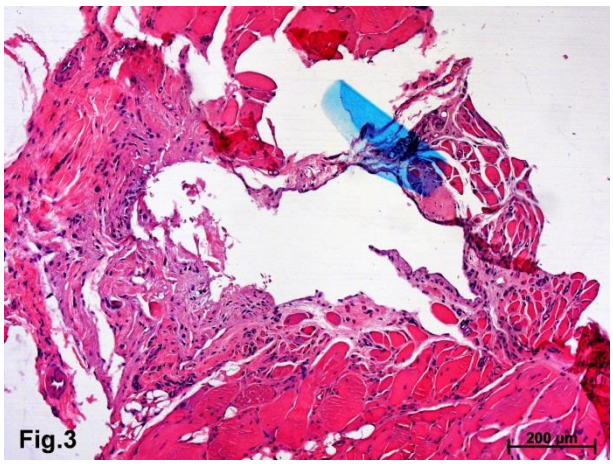

Fig. 3: Zone Prolene implantation. Rough sclerosis surrounding tissues

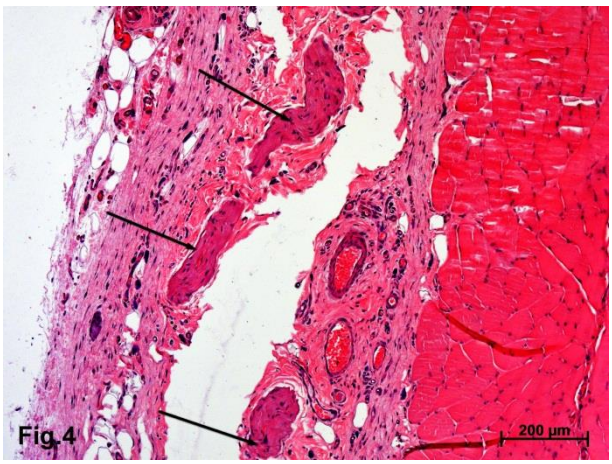

Fig. 4: Zone Prolene implantation. Arrows indicate the peripheral nerves with signs of multiple sclerosis

References

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