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EXPERIMENTAL STUDIES ON FETAL SURGERY OF RABBITS

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Summary: In contrast to adult skin wound, fetal wounds heal without inflammation, collagen deposition or wound contraction. The mechanism of this process are unknown, but may be unique to fetal cells, the fetal environment, or a combination of both.

In order to determine whether fetal cells or fetal environment are the only factor responsible for scarless wound healing, two experimental studies were performed on 15 New Zealand female and 10 male rabbits. Female rabbits were in the last trimester of their pregnancy.

In the first study, skin grafts skin grafts were transferred from mother to its fetus and from the fetus to the mother. After birth, approximately at postoperative 8-10 days, the grafts were biopsied and were evaluated histopathologically. The histopathological evaluation revealed that there were no rejection either two grafts and the two grafts healed by the normal healing process.

In the second group, at 14-24 days gestation 5 New Zealand female rabbits were taken under anaesthesia and 1-3 ml of amniotic fluid was aspirated from each animal using a sterile syringe after hysterotomy. The amniotic fluid was injected around silicone cubes sized 1x1x1 cm which had implanted to 10 male rabbit’s submammary tissue. Amniotic fluid injected implants were compared to the control group at the same animal. The results showed that a single dose injection of amniotic fluid can decrease capsule formation around silicone implant.

It is, thus, concluded that scarless wound healing in the fetus is not solely due to fetal cells or fetal environment.

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LABELLING STUDIES OF FEMORAL FRACTURES TREATED WITH NYLON, TEFLOM AND STAINLESS STEEL PLATES IN DOGS AND GOATS

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Eighteen dogs and goats, three of each species in each group of 1, 2 and 3 were treated for experimental femoral fractures using nylon, teflon and stainless steel plates respectively without compression technique. Oxytetracycline labelling was done 7 days before sacrificing the animals to evaluate type and extent of callus formation. Fresh undecalcified ground bone sections when examined under UV light, revealed osseous union at the fracture site with different degree of fluorescence on days 60, 90 and 120. The newly formed bone was cancellous in nature and the osteogenic activity was prominent on periosteal surface compared to endosteal surface. Early healing and remodelling changes were noticed in groups 1 and 3 with less callus formation. The external callus was extensive with higher fibrocartilagenous component in group 2 animals. Nylon was found to be an ideal semirigid plate with healing comparable to stainless steel plating.
Tavşanlarda Fetal Cerrahi Üzerinde DeneySEL Çalışmalar


Fetal hücreler ya da fetal çevreden hangisinin skarsız iyileşmeden sorumlu olduğunu belirlemek amacıyla, 15 dişi ve 10 erkek Yeni Zelanda tavşanında iki çalışma planlandı. Dişi tavşanları gebeliklerinin son 1/3‘ündeydiler.

İlk çalışmada, anneden yavruya ve yavruдан anneye deri greffleri nakledildi. Doğumdan sonra postoperatif 8-10 gün sonra, greffler alındı ve histopatolojik olarak değerlendirildi. Histopatolojik incelemeler sonucu, her iki greff etkin reaksiyonu olmasıldığı ve her iki greffin normal yara iyileşmesi prosesine uygun olarak iyiştiğini saptandı.

İkinci grupta, gebeliklerinin 14-24 günündeki 5 Yeni Zelanda tavşanı anestezive alındı ve her bir hayvandan 1-3 ml amniyotik sıvı histerotomi sonrası steril bir enjektörle aspire edildi. Bu amniyotik sıvı, 10 erkek tavşanın meme altı dokusuna yerleştirilen 1x1x1 boylu su Shotlandı silikon küplerin çevresine enjekte edildi. Amniyotik sıvı enjekte edilen implantlar aynı hayvandaki kontrol grubuyla kıyaslandı. Sonuçlar tek doz amniyotik sıvı verilen gruptaki silikon implantların çevresinde kapsül formasyonunun azalığını gösterdi.

Skarsız yara iyileşmesinin fetal hücreler ya da fetal çevreden herhangi birinden kaynaklanmadığı düşünülmektedir.