

Viabilitas Tandur Tulang Cacah Tanpa Perikondrium, Dengan Perikondrium Satu Sisi, dan Dengan Selimut Perikondrium: Studi Experimental = Viability of Diced Cartilage Graft Without Perichondrium, Perichondrium Attachment One-Sided, Wrapping Perichondrium :An Experimental Study in Rabbit

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Abstrak

Background : In the long-term observation of autologous grafted cartilage grafts, it is hoped that the grafts will not experience atrophy and cell viability can be maintained, thereby preventing the possibility of irregular contours being formed. Based on the potential factors that determine the viability of the shredded cartilage grafts such as preservation of the perichondrium and the substance used to close the cartilage graft, this study aims to investigate the relationship between cartilage cell regeneration and degeneration in cartilage with intact perichondrium, perichondrium as covering substance. cartilage, and shredded cartilage without

perichondrium Methods: 18 chopped cartilage grafts were taken from the side of the auricular concha of the hycole rabbit and implanted into the subcutaneous sac in the posterior trunk region of the rabbit. Chopped cartilage grafts are divided into 3 groups, namely cartilage with an intact perichondrium on one side, perichondrium as a bone covering substance.

cartilage, and chopped cartilage without perichondrium. After 12 weeks of the implantation period, an analysis of the shredded cartilage graft was performed

macroscopically and microscopically through Hematoxylin and Eosin staining, as well as Mason Trichrome.

The results of the examination were compared in the three groups. Results: There was no significant difference in the macroscopic examination of the shape, color, and contour in the three groups compared to post-implantation, it was found that the capsules that covered the chopped cartilage grafts were found.

Viability in groups 1 and 2 was found to be higher than in group 3. Cell proliferation under the perichondrium was found evenly in groups 1 and 3, while in group 2 there was a spike in proliferation of young cells at the incision site. The perichondrium is the substance that surrounds the bone graft

Chopped cartilage showed moderate cartilage cell resorption and proliferation of young cells slightly below the perichondrium (11.5%)

Conclusion: The intervention of the perichondrium, both as a wrapping substance and as an adhesive on the chopped cartilage grafts, did not differ macroscopically. However, there was a significant difference in cell viability microscopically, which was characterized by with differences in cell regeneration and degeneration.

Latar Belakang : Dalam pengamatan jangka panjang tandur tulang rawan cacah autolog, diharapkan tandur tidak mengalami atrophia dan viabilitas sel dapat dipertahankan, sehingga mencegah kemungkinan terbentuknya kontur irregular. Berdasarkan faktor-faktor potensial yang menentukan viabilitas tandur tulang rawan cacah seperti preservasi perikondrium dan substansi yang dipakai untuk menutup tandur kartilago, studi ini bertujuan untuk menginvestigasi hubungan antara regenerasi dan degenerasi sel kartilago pada

tulang rawan dengan perikondrium yang intak satu sisi, perikondrium sebagai substansi penyelimut tulang rawan, dan tulang rawan cacah tanpa perikondrium

Metode: 18 tandur tulang rawan cacah diambil dari sisi concha auricular kelinci hycole dan dimplantasikan kedalam kantung subkutan pada regio trunkus posterior kelinci. Tandur tulang rawan cacah dibagi menjadi 3 group yaitu tulang rawan dengan perikondrium yang intak satu sisi, perikondrium sebagai substansi penyelimut tulang rawan, dan tulang rawan cacah tanpa perikondrium. Setelah 12 minggu masa implentasi, dilakukan analisa tandur tulang rawan cacah secara makroskopis dan mikroskopis melalui pewarnaan Hematoxylin dan Eosin, serta Mason Trichrome. Hasil pemeriksaan dibandingkan pada ketiga grup. Hasil: Tidak ada perbedaan bermakna pada pemeriksaan makroskopis bentuk, warna, dan kontur pada ketiga grup dibandingkan pasca implantasi, didapatkan kapsul yang menyelimuti tandur tulang rawan cacah. Viabilitas pada grup 1 dan 2 didapatkan lebih tinggi dibandingkan dengan grup 3. Proliferasi sel dibawah perikondrium didapatkan merata pada grup 1 dan 3, sedangkan pada grup 2 didapatkan lonjakan proliferasi sel muda pada sisi sayatan. Perikondrium sebagai substansi yang menyelimuti tandur tulang rawan cacah didapatkan resorpsi sel tulang rawan sedang dan proliferasi sel muda yang sedikit dibawah perikondrium (11.5%)

Kesimpulan: Intervensi perikondrium baik sebagai substansi pembungkus maupun melekan pada tandur tulang rawan cacah tidak berbeda secara makroskopis. Namun terdapat perbedaan signifikan pada viabilitas sel secara mikroskopis, yang ditandai dengan perbedaaan regenerasi dan degenerasi sel.