Research of the Fate of Fat Graft

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Early death and replacement of adipocytes – only survived at peripheral zone (300um)

Objective of the study

• Investigate the fate of fat graft and the role of adipose derived stem cell
• Aspirated fat graft (our model) VS resected fat pad (Yoshimura’s model)
Materials and methods

- Liposuction from 3 female pts (38-50 y/o)
- Cultured ASCs from a 48 y/o woman
- Female BALB/cAnN.Cg-Foxn1nu/CrlNar nude mice (8 weeks old)
- A: fresh fat + N/S (n=6)
- B: fresh fat + ASCs (1x10^7)
- Harvested at day 7, 14, 28, 90
Histology and Immunohistochemistry

- H&E stain
- Anti-perilipin: for lived adipocyte
- Human HLA ABC: anti-MHC class I ab
- HLA stain percentage = $B \ (\text{pixel}) / C \ (\text{pixel})$
- Peripheral zone (300um) and central zone
Results

90 days after fat grafting

P = 0.03
No significant difference of donor cell survival between groups (control, ASC)
Conclusion

• ASCs improved fat graft volume retention
• Anti-perilipin stain showed diverse distribution of lived adipocytes: no difference between central and peripheral zones
• ASCs didn’t improve donor cell survival as comparing with control
Significance of the findings

• The aspirated fat graft, not like resected fat pad, has diverse survival pattern
• ASCs don’t make more donor cells survive. Instead, ASCs recruited more host cells to maintain the fat graft volume.