**13 - Surgical Anatomy**

## OC-011 - (23954) - NEUROHISTOLOGICAL DESCRIPTION AND COMPARISON OF THE BREAST AND DIEP FLAP SKIN TERRITORIES

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Sensory recovery constitutes an essential outcome of breast reconstruction after mastectomy. Abdominal wall-based flaps remain the gold standard for autologous breast reconstruction in most centers, and flap neurotization is increasingly popular since it appears to provide quicker and better postoperative sensation. Previous research shows that full sensory recovery remains inconsistent even after neurotization of the flaps. This study aims to increase the understanding of flaps sensory recovery by describing and comparing neurohistologically the skin of the breast and the infraumbilical abdomen.

An observational cross-sectional study was conducted on one hundred hemi-bodies from abdominoplasty, mastopexy and breast reduction patients, as well as formalin-preserved adult cadavers. From each hemi-body, full thickness skin biopsies have been collected, four from the infraumbilical abdomen and five from each breast quadrant and from the areola. Each sample was subjected to histological evaluation, after staining with hematoxylin and eosin and immunohistochemistry using antibodies specific to the neuronal markers S100, Peripherin (sympathetic nerve fibers) and Annexin V (sensory nerve fibers). A microscopic analysis was used to describe the general characteristic of the skin layers and to identify nerve fibers.

The general skin morphology appeared to be grossly similar, whilst notable preliminary differences in nerve fiber density indicated that the lower medial infraumbilical quadrant was the most homologous to breast skin.

Knowing the differences and similarities between these distinct regions could guide surgeons in the process of selecting the abdominal skin regions with the greatest homology to the breast skin, potentially improving the sensory recovery of the reconstructed breasts.

**Palavras-chave : Breast reconstruction, Nerve fibers, Free tissue flap**