

Spread of cancer Local spread

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The tumour increases in size and invades adjacent breast parenchyma. It may involve the skin, leading to ulceration and satellite nodules, and/or involve pectoralis major, serratus anterior and even the chest wall. The tumour cells release a number of growth factors; namely , fibroblast growth factor (FGF), transforming growth factor (TGF α and TGF β vascular endothelial growth factor (VEGF). FGF induces mitosis of adjacent fibrocytes, which convert to fibroblasts and lay down collagen (desmoplastic reaction). Contraction of collagen leads to shortening of Cooper's ligament, pulling the skin inwards and giving rise to the telltale signs of dimpling (shortened single Cooper's ligament), puckering or tethering (many Cooper's ligaments shrunken) or nipple retraction.

Revision #1

Created 2025-12-31 15:21:52 UTC by Omar Ayman

Updated 2025-12-31 15:21:52 UTC by Omar Ayman