MAMMOCARE Project achieves earlier and more accurate breast cancer diagnosis

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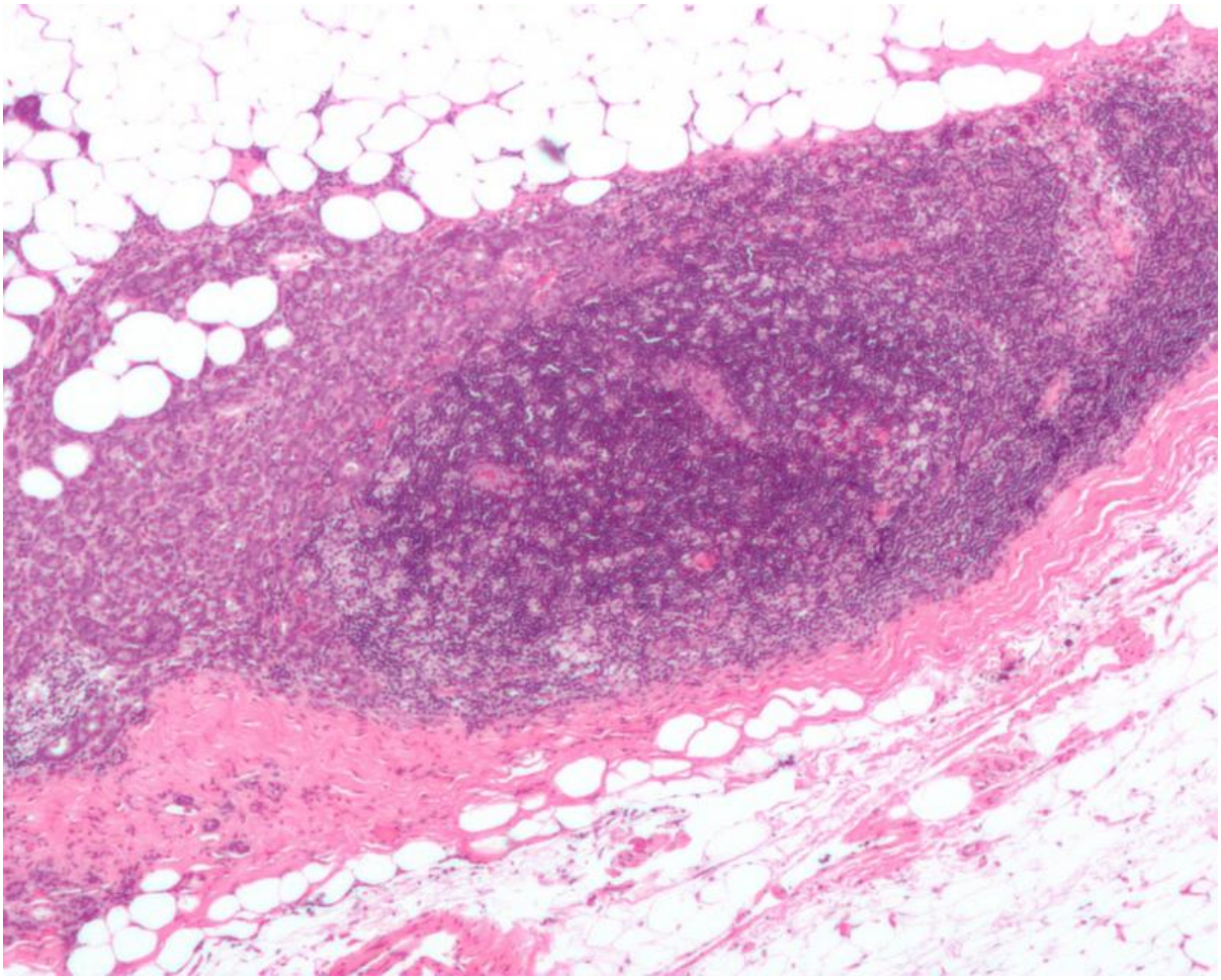

Micrograph showing a lymph node invaded by ductal breast carcinoma, with extension of the tumour beyond the lymph node. Credit: Nephron/Wikipedia

Breast cancer is by far the most frequent cancer among women, and one of the leading causes of cancer-related mortality and early diagnosis is essential to reduce the risk of mortality. First diagnostic tool is clinical imaging (mainly Mammography and Ultrasound) but suspicious findings usually require a biopsy to confirm the diagnosis; 2% of women who undergo a screening mammogram will require some type of breast biopsy (1.3 million women each year in Europe).

Breast biopsy is an image-guided procedure that can use different imaging technologies. Apart from US-guided biopsy, which is a manual procedure with limited indications, all current solutions are based on discrete scans of static images taken at different steps during the procedure. This guidance method makes current biopsy techniques to be long procedures with limited accuracy.

MAMMOCARE, in order to improve these procedures, offers a breast biopsy system guided by 3D real-time PEM (Positron Emission Mammography) imaging and offering real-time guidance and correction of the needle trajectory for higher accuracy and efficiency in tumour sampling. It is the first breast biopsy system in the market offering real-time monitoring and guidance. The system automatically calculates the best needle position to perform the biopsy and it places and inserts accordingly for the physician to extract the selected sample.

As José Luis Peris, IBV researcher, explained: "realtime monitoring and control of biopsy procedure, together with the high precision mechanics of the biopsy positioning module assure an accurate sampling of the target lesion as well as shortening the procedure with regard to current techniques".

Clinical feasibility of the system has been assessed through a clinical validation study at the facilities of Stichting Het Nederlands Kanker Instituut – Antoni Van Leeuwenhoek Ziekenhuis (Netherlands),

collaborating end-user.

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