

NEED AND OUTCOMES OF A 3D BREAST IMAGE TO AID CONSERVATIVE CANCER SURGERY PLANNING: RESULTS OF A MULTIDISCIPLINARY FOCUS GROUP

Inês C. MOREIRA^{a,b,c}, Isabel RAMOS^{a,b}, Bruno OLIVEIRA^d, José Luís FOUGO^{a,b}, Pedro Pereira RODRIGUES^{a,d}

^aFMUP - Faculty of Medicine of University of Porto | ^bCHSJ - Hospitalar Center of S. João | ^cCESS-IPP - Porto Health School | ^dCINTESIS - Centre for Health Technology and Services Research

Introduction

The preoperative localization of non-palpable breast lesions (smaller than 10mm) guided by imaging is an important and required procedure for conservative breast surgery. The purpose of this study is to identify needs and outcomes that can be explored in order to develop and assess a new 3D breast image to aid preoperative localization of nonpalpable breast lesions and surgical planning.

Method

A focus group was performed on November 2nd, 2017, involving a multidisciplinary team of experts from the Breast Center of Hospitalar Center of S. João (CHSJ), Porto, in order to identify needs and outcomes that can be explored to develop and assess a new 3D mammogram reconstruction. Based on literature review and on empirical experience of the researchers, an instrument for collection of data was designed in a semi-structured format, allowing the participants to approach the subject in a free and flexible way.

Results

Of all the eligible experts, the focus group included six breast surgeons (out of 7 eligible), two radiologists (out of 5 eligible) and three nurses (out of 6 eligible).

The session took an hour, where each participant was asked to write on paper what they consider to be relevant for a breast 3D image for surgical planning. The results were written on the board and then discussed by importance and categorized (Figure 1, Table 1).

In a general way, the participants considered the new tool very interesting. The participants highlighted the need for a breast image which would represent the patient at the operating room position. This constitutes a high challenge for development, since mammography images are acquired from different positions and with specific features, along with being different from other breast imaging methods, such as ultrasound or magnetic resonance. Notwithstanding, some work in the development of the tool has been already performed according to related literature.

Concerning outcomes for assessment, “surgical margins” and “reoperation rates” were the most voted ones. This result also agrees with the related literature, since most studies refer these outcomes as the important ones.

Finally, although costs were the least important outcome, it was said that the new tool should not bring any additional or significative costs to the Hospital.

Category	Features
Image features	<ul style="list-style-type: none"> Breast position at the operating room Image rotation Type of mammary gland (dense or adipose) Axillary extension - with lymphatic nodes if possible Correlation of the lesion with the specimen radiography
Lesion features	<ul style="list-style-type: none"> Size and volume Distance to the skin, to pectoral muscle, to nipple-areolar complex Margins, limits If associated micros, their distance to the nodule If multifocal, distance between the other lesions
Localization	<ul style="list-style-type: none"> Exact localization of the quadrant Exact pre-op localization of lesion regardless of the position of the breast

Table 1. Needs for a breast 3D image to surgical planning. Features are by order of importance.

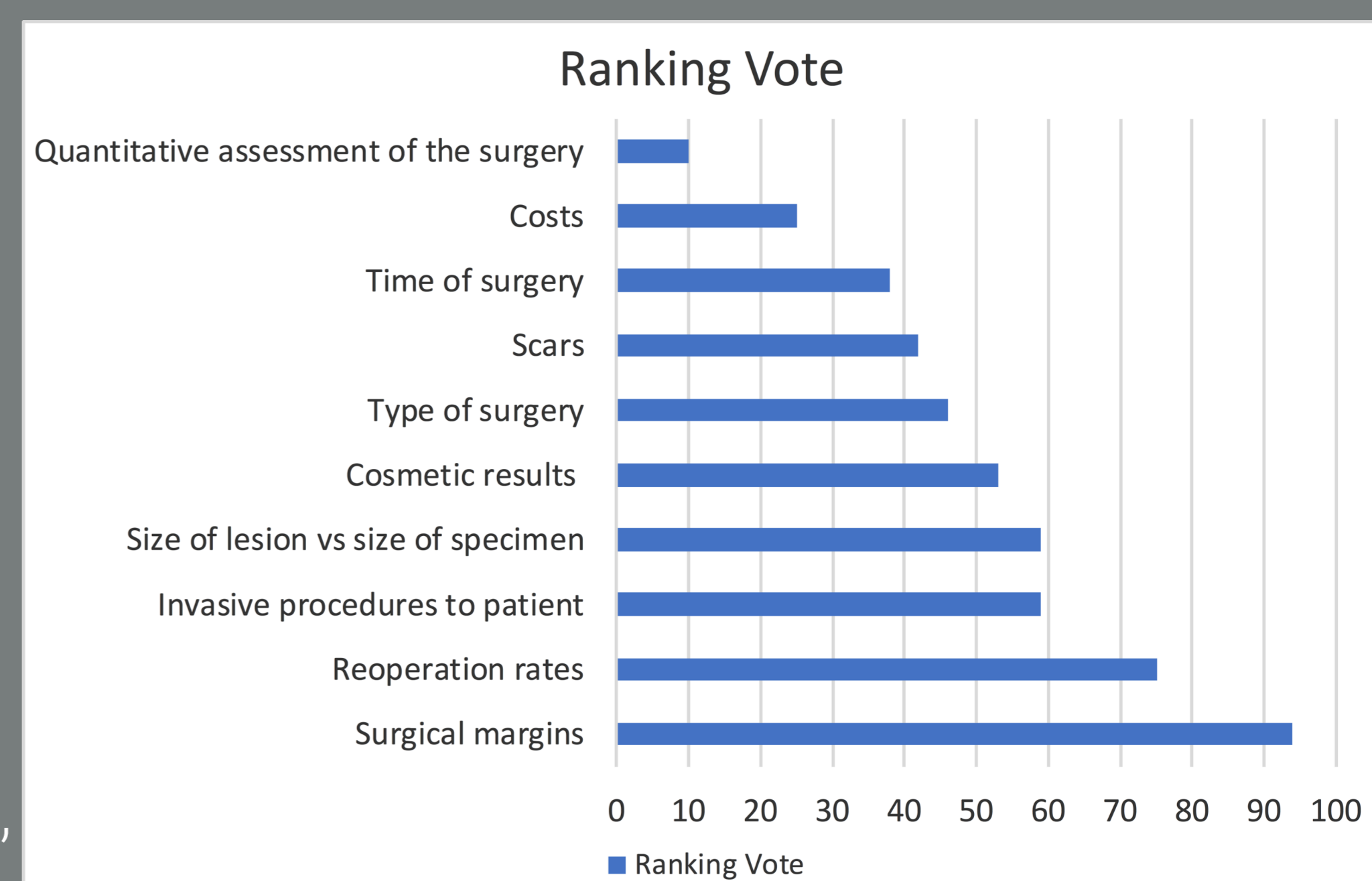


Figure 1: Outcomes for a breast 3D image assessment: ranking vote.

Future Work

Current work is focused on finalizing the pilot version of the tool according to the needs brought up by the focus group, define measurement instruments to assess the outcomes identified in the session, and deploy and recruit participants for an experimental study already authorized to run in the breast centre, during the year of 2018.