



SS02

Scientific Session 2

14:00-15:30

GBR 103

Chairperson(s):

Eun Ju Son (Gangnam Severance Hospital, Yonsei University College of Medicine, Korea)

Young Mi Park (Inje University Busan Paik Hospital, Korea)

14:20-14:30 (SS02-P3)

Extracting Valuable Indicators and Ranking by Relative Importance of Automated Breast Volume Scanner and Doppler Ultrasound in the Differential Diagnosis of Benign and Malignant Breast Nodules

Lixia Yan¹, Luxia Jing¹, Peilei Wang¹, Xi Wang¹, Hansheng Xia¹, Beijian Huang¹

¹Department of Ultrasound, Zhongshan Hospital, Fudan University, China

PURPOSE: To screen the ABVS transverse plane indicators, coronal plane indicators and Doppler ultrasound blood flow indicator for the differential diagnosis of benign and malignant breast nodules by logistic regression multivariate analysis and rank the indicators according to their relative importance.

MATERIALS AND METHODS: According to the inclusion and exclusion criteria, a total of 943 lesions were included in this study from 741 patients who received surgical treatment for breast tumors in our hospital from January 2015 to May 2019. Two observers retrospectively analyzed ABVS transverse plane indicators, coronal plane indicators and Doppler ultrasound blood flow indicator for each lesion. First, single factor analysis was carried out for each indicator. Indicators $P \leq 0.2$ in single factor analysis were included in multifactor analysis. Multivariate analysis was conducted for variable screening by progressive regression method, and odds ratios (OR) of various factors and the corresponding 95% CI were calculated.

RESULTS: Multivariate analysis showed that irregular shape, angular/spiculated appearance, complex echo of cystic and solid, wormy appearance, retraction phenomenon, distortion or thickening of surrounding tissue and the presence of blood flow were independent risk factors for breast cancer. Among them, $RI \geq 0.75$, wormy appearance, angular/spiculated appearance and retraction phenomenon ranked the top four. OR values were 17.46 (95% CI: 8.83-34.52), 8.23 (95% CI: 2.24-30.25), 4.39 (95% CI: 1.11-17.41), 3.88 (95% CI: 1.67-9.04), respectively.

CONCLUSION: ABVS transverse plane, coronal plane and Doppler ultrasound blood flow indicators were all valuable in the differential diagnosis of benign and malignant breast nodules. The independent risk factors and their relative importance of breast cancer were as follows: $RI \geq 0.75$, wormy appearance, angular/spiculated appearance, retraction phenomenon, complex echo of cystic and solid, irregular shape and $RI < 0.75$.