Background

The Scarff-Bloom-Richardson score is calculated by adding a score of 1 (best) to 3 (worst) for nuclear grade, tubule formation, and mitotic count, yielding a total score that ranges from 3 (best) to 9 (worst). SBR scores of 3 to 5 are grouped as grade 1 (low-grade), scores of 6 and 7 are considered grade 2 (intermediate-grade) and scores 8 and 9 are grade 3 (high-grade). We analyzed nodal positivity and distant disease probability by individual SBR score to determine whether both increased as SBR score increased and to determine whether the current groupings were appropriate.

Methods

We used a prospective database to find 2,985 patients with invasive ductal carcinoma with axillary nodal status and all data to calculate SBR scores. Nodal positivity was analyzed by SBR score. N0(i+) was considered node negative. P-values between each SBR group were calculated using 2x2 tables. The probability of distant recurrence was determined by Kaplan-Meier Analysis. The difference between curves was analyzed by the log-rank method.

Results

As the SBR score increased, so did nodal positivity and the probability of distant recurrence (Figure). The rate of nodal positivity appeared to be appropriately categorized by low, intermediate and high grade when the patients were grouped SBR 3, 4 (less than 15%) versus 5, 6 (less than 30%), versus 7, 8, 9 (less than 45%). Distant disease, however, conformed best when grouped SBR 3, 4, 5 versus 6, 7, versus 8, 9 as in the standard grouping pattern.

Conclusions

There was excellent correlation between SBR score and nodal positivity and the probability of distant disease. As SBR score increased, nodal positivity increased but it did not conform to the standard grouping pattern. While distant recurrence was the end-point, our data confirmed the currently accepted grouping pattern. While SBR scores of 3, 4, and 5 are considered low-grade, there is a substantial risk of nodal metastases and distant disease in patients with SBR scores of 4 and 5.

The only true low-grade lesions are those that score 3, and they represent only 5% (138/2985) of patients.