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Evaluation of the „Two-Week-Wait“ Referral System for Possible Sarcomas in the United Kingdom.

Background

The “Two-week-wait” referral system was introduced in 2000 in the UK aiming to detect malignancies as bone and soft tissue sarcomas earlier. There are 4 worrying features indicating malignancy: A size > 5 cm, an increasing soft tissue swelling, a location deep to the fascia and a painful lump. As soon as one of these parameters is positive, the general practitioner (GP) is able to refer the patient to a specialist centre within two weeks.

Questions/Purposes

This study was set out in order to investigate the accuracy of the GPs’ interpretation of the 4 worrying features in comparison to the actual findings at the *Royal Orthopaedic Hospital Birmingham, UK*. Moreover, based on the evaluated reliability of each parameter in detecting malignancy, the features may be refined.

Patients and Methods

A retrospective study was carried out including 135 patients referred within one year (August 2013 – July 2014) to the *Royal Orthopaedic Hospital Birmingham, UK* over the “Two-week-wait” referral pathway. Another 27 patients were excluded due to prior known malignancy.

Statistical analysis was performed using SPSS. Fisher’s exact test was used for measurement of the significance and accuracy for the 4 features was calculated with Chi-square distributions. The correlation of the sizes estimated was tested by linear regression analysis and t-test for paired samples.

Results

45 patients were subsequently diagnosed with a malignancy (33%) and 90 with a benign lesion (67%). The highest accuracy with 82% was evaluated for “size > 5 cm”, followed by “location deep to the fascia” (77%). The parameter most predictive of malignancy was found to be “size > 5 cm” with a sensitivity of 76%. With only 27% sensitivity, the feature “pain” did not show any association with malignancy. The combination most predictive of malignancy was a positivity for “size > 5 cm”, “increase in size”, “location deep to fascia” as well as negativity for “pain” (10 out of 13 patients). Lowering the worrying size to “size > 4 cm” increased the sensitivity up to 89%.

Conclusions

Based on the results, the parameter “size > 5 cm” should be lowered by one cm to a “size > 4 cm”. Moreover, the feature “pain” is recommended to be removed from the referral letter, as it is not predictive of malignancy. One limitation of the study is that only patients referred over the “Two-week-wait” pathway to the specialist centre were included into statistical analysis.

These findings are clinically relevant, as the features will be refined in the UK with the aim to increase early referrals of soft tissue sarcomas. By reducing the size to 4 cm, more soft tissue sarcomas will be referred to specialist centres at an early stage, leading to better prognosis for the patients.