

Evaluation of Ultrasonographic Appearance of Superficial Neurofibroma

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Abstract

Purpose: It is difficult to establish a differential diagnosis from the ultrasonographic examination of superficial neurofibromas. Hence, this retrospective study was conducted to elucidate the characteristic features of the sonographic appearance of superficial neurofibromas.

Subjects and Methods: Thirty-one patients (39 lesions) underwent ultrasonographic and histopathological examinations at our university hospital within a period of eight years, from January 2006 to December 2014. The sonographic findings including shape, border, lateral shadow, internal echo, posterior echo, and deformation by the dynamic test were studied and compared with the histopathological findings. Furthermore, a classification based on the shape and location of occurrence were attempted.

Result and Discussion: Sonographic appearance of the lesions varied widely. The 39 lesions were classified into two major groups: mass formation (30/39 lesions; 76.9%) and non-mass formation (9/39 lesions; 23.1%) lesions. The lesions were most prevalent in the head and neck (13/39 lesions; 33.3%). The size of most lesions (60%) was less than 20mm. They frequently presented with high internal echoes with funicular appearance (21/39 lesions; 53.8%). Particularly those lesions extending from the epidermal to subcutaneous tissues (7 lesions) more frequently presented with high internal echoes and a funicular appearance (6/7 lesions; 85.7%). The results of the dynamic test showed that all lesions were deformed, indicating that they were soft lesions. When these findings were compared with the histopathological findings, the funicular high internal echoes were found to be corresponding to the adipose tissue.

Conclusion: Neurofibromas have various sonographic appearances. When a soft superficial lesion with funicular high internal echo is observed, the tumor type of neurofibroma should be considered.

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