Brachial plexus palsy from nodular fasciitis with spontaneous recovery: implications for surgical management

Case illustration

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KEY WORDS • nodular fasciitis • brachial plexus palsy

Nodular fasciitis is a fairly common dermatological disease.1,3 It usually appears in young adults aged 30 to 40 years as a nodule located in the upper extremities or in the head and neck region.1 The nodules develop within weeks and often display spontaneous regression, especially after biopsy.1 Recurrence and multifocal appearances have been described.4 We present a case in which nodular fasciitis caused neurological symptoms by compromising the brachial plexus. As far as we know, this has not yet been reported in the literature. The major focus of this report is surgical management, because this disease should be treated by biopsy and observation, and radical excision is not indicated.

This 26-year-old woman presented with complete brachial plexus palsy of the left arm, hypesthesia of dermatome C5–T1, and loss of her reflexes, which had rapidly developed within days. During head flexion to the left side, the patient experienced pain radiation into her left arm. A prominent 3 × 3-cm nodule was visible and palpable in the left supraclavicular fossa. The well vascularized 2.5 × 2 × 1.5-cm lesion appeared on T1-weighted magnetic resonance (MR) images as isointense to the scalenus muscle (Fig. 1), and on T2-weighted images as isointense to cerebrospinal fluid (CSF) with inhomogeneous contrast enhancement (Fig. 2).

After the patient underwent incomplete tumor resection for decompression and biopsy, she recovered without any neurological deficit. Within 1 month she presented with only a minor motor deficit of the deltoid muscle and a mild hypesthesia of C-5. Postoperatively, the remaining nodule was no longer palpable. Two months later the patient’s neurological symptoms had completely resolved. Histopathological investigation revealed the typical picture of nodular fasciitis, with mitotic plump spindle cells and numerous thin-walled blood vessels lined with prominent endothelial cells. Characteristic multinucleated giant cells and chronic lymphocytic inflammatory infiltrate were also seen.

Other tumors of the brachial plexus associated with a rapid onset of symptoms and a similar but invasive and irregular appearance on MR images are breast cancer metastases (24%) and lung cancer (19%),6 Rare malignant tumors presenting with brachial plexopathies are neurofibrosarcoma, Ewing sarcoma, eccrine sarcoma, osteosarcoma, mesothelioma, malignant fibrous histiocytoma, and metastatic melanoma.6 Benign tumors usually present with a focal neurological deficit restricted to the involved peripheral nerve root or fascicle. Neurofibromas display similar MR imaging characteristics, but may contain central areas with decreased T2 signal intensity. On T2-weighted images, lipomas are typically hyperintense and desmoids are hypointense.6

Nodular fasciitis is a benign entity restricted to peripheral areas that often displays spontaneous regression.1 In cases of nodular fasciitis, surgery is only indicated for diagnostic reasons because of the high spontaneous regression rate,1 and thus does not need to be complete or radical. This case adds another important differential diagnosis to known soft-tissue tumors that compromise the brachial plexus.

References