Lipomas in the hand: a common tumor or a potential pitfall?

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Objective

Lipomas are slow growing benign fatty tumors which occur anywhere in the body. Common sites are neck, shoulders, back, abdomen, arms and thighs. However, lipoma is an unusual cause of a mass in the hand which can present initial diagnostic challenges. We reviewed our experience of cases of lipomas in the hand and discuss their diagnostics, management and pitfalls.

Methods

Our sarcoma service provides a rapid access single referral point for the initial assessment and investigation of all soft tissue tumors from any body site. Having been referred several hand lipomata, we carried a review of our practice. Clinical databases were searched to identify cases of interest. Individual case files were reviewed with particular focus on presentation, diagnostics and surgical management. We also performed a literature review using search terms hand lipoma and lipomatous tumors. Online medical databases were used alongside textbooks on hand surgery.

Results

Database search identified several cases. We focused on our most recent cases as being of interest. Ages ranged from 30 to 57 years and presented with symptoms of a lump in the hand for between two to five years.

One patient had a relatively small lipoma but noticed some paresthesia to two fingers. She was however functionally not compromised. Another patient had a very large multi-lobulated lipoma increasingly interfering with his job due to size.

A third patient was diagnosed by the general practitioner and initial hand surgeon as a lipoma but further investigations revealed an extra skeletal myxoid chondrosarcoma.

After completion of relevant imaging, biopsy and multidisciplinary discussion in the sarcoma team, the two patients with lipomas underwent surgical excision and the sarcoma patient referred to a further specialist center.

Careful planning of incision lines for skin flap survival was carried out and intra-operative anatomical distortions were taken into account.

Our literature search identified a large number of papers regarding lipoma in the hand. Most reported cases are asymptomatic and many reports relate to median nerve symptoms and/or incidental finding during carpal tunnel surgery. Overall, the advances of medical imaging technology have improved diagnostics and become more important in the management pathway. Literature search yielded 426 papers on hand tumors, with 158 reports on lipomatous tumors in the hand. Lipoma in the hand has been reported in literature as early as 1922.

The incidence of lipomas in the hand is about 1% of all lipomas in the body. Patients are generally asymptomatic for prolonged time and usually seek medical treatment for cosmetic reasons or when experiencing interference with routine manual activities.

The most frequent clinical symptom is limitation in movement depending on mass dimensions or pain and paraesthesia secondary to nerve compression if the lipoma is found in a closed anatomical space such as the carpal tunnel.

Clinical diagnosis can be problematic due to the inability to palpate the entire extent of deeper lesions due to overlying thick palmar fascia. High quality detailed imaging is important in diagnosis and surgical planning.

On ultrasound lipomas commonly appear as elongated isoechoic to hypechoic lesions, often with well-defined margins. No internal or increased vascularity and posterior acoustic enhancement are seen. The relationship of the lesion with adjacent neurovascular and musculotendinous structures can be evaluated. However, definite tissue characterisation and determination of extension and relationship with adjacent structures are inferior to the findings of MR imaging.

MR imaging clearly defines the deeper extension, adjacent tendons and neurovascular structures, which is vital if surgery is being contemplated; the degree of compression of the underlying nerves is often well-demonstrated. Classically, a lipoma appears as a slightly lobulated homogeneous mass with well-defined borders, and demonstrates hyper intense signal on both T1- and T2-weighted sequences. Small, thin, internal hypo intense septa may be present. Complete suppression of the fat signal on fat-saturated sequences would show the benign nature of the mass.

Areas of incomplete fat suppression with nodular and thick enhancing septa as well as a solid enhancing soft tissue component are suspicious of malignancy, and liposarcoma should be excluded.

Recurrent lipomas should also be viewed with suspicion, since the risk of malignancy is higher.

MR also helps in the selection of suspicious areas for histological evaluation. Non-guided biopsies can result in non-representative biopsy samples, potentially leading to misdiagnosis.

Malignous surgery is curative and provides relief for associated neuropathy. Incisions need to be carefully planned for skin flaps viability and to avoid scar contracture. Intra-operatively technical challenge can be encountered due to loss of normal/displaced anatomy of tendons and neurovascular bundles. Patients need to be informed about the risk of neurovascular damage with surgery and conservative management is acceptable if functionally asymptomatic.

Conclusion

Lipomas in the hand palmar are uncommon and may present with minimal symptoms. Early referral to a specialist center is important to exclude sarcoma as well as choosing the correct imaging for diagnosis, followed by biopsy as appropriate. Technical challenge may be encountered during surgery due to the distorted/displaced anatomy of neurovascular bundles and tendons. Skin integrity need to be taken account of if the tumor is large and multicellular.