Fibrosarcoma of anterior abdominal wall: A rare case report

Raju Wilkinson, Rajiv Sonarkar, Zansher Khan Nazar*, Shreyas Sonawane, Rahul Dhole

N. K. P. Salve Institute of Medical Sciences, Nagpur, Maharashtra, India

1. Introduction

Adult Fibrosarcoma (FS) is very rare and it constitutes approximately 1% of adult sarcomas. It is a malignant or intermediate (rarely metastasizing) tumor, composed of fibroblasts with variable collagen production. Fibrosarcomas usually involve the deep tissues of the extremities, trunk, head and neck. Adult FS usually appears in the fourth to sixth decades of life with a male predominance.

Adult fibrosarcoma may arise in dermofibrosarcoma protuberans (DFSP), Solitary Fibrous Tumor (SFT) and in well differentiated liposarcoma (LPS), either in the primary or in a recurrence, as a reflection of tumors progression.

Here a rare case of fibrosarcoma of the anterior abdominal wall was managed in a private hospital and is presented.

2. Case report

A 62 years male patient presented with a large swelling over anterior abdominal wall since 20 years. Physical examination revealed a 15 × 15 cm large lobulated swelling situated over right hypochondrium and extending to epigastrum and right lumbar region. A wide local excision of tumour was done till the posterior rectus sheath. As the skin was involved the tumour was excised along with the skin. A large defect of around 20 × 20 cm was created in anterior abdominal wall. Mesh was placed over the defect and defect was closed by rhomboid flap reconstruction.

DISCUSSION: The World Health Organization (2002) defined fibrosarcoma as a malignant tumor, composed of fibroblasts with variable collagen and, in classical cases, it has a herring bone pattern on light microscopy. Fibrosarcomas typically present as a non-specific soft tissue mass, sometime in a previously irradiated field or rarely in association with implanted foreign material.

Fibrosarcomas metastasize to lungs and bone, especially the axial skeleton, and rarely to lymph nodes.

CONCLUSION: Although rare, fibrosarcoma should also be kept as a differential diagnosis in a case of anterior abdominal wall lumps.

© 2020 Published by Elsevier Ltd on behalf of IJS Publishing Group Ltd. This is an open access article under the CC BY-NC-ND license (http://creativecommons.org/licenses/by-nc-nd/4.0/).
defect was closed by rhomboid flap reconstruction and 14 number suction drain was placed. The tumour was sent for Histopathology. Patient tolerated the surgery well and was vitally stable post-operatively.

On Histopathology, microscopically tumour showed intersecting fascicles of spindle cells with elongated slender nuclei and moderate amount of eosinophilic cytoplasm. Focally herring bone growth pattern was seen which was suggestive of low grade fibrosarcoma reaching up to but not involving the base. Immunohistochemistry revealed the tumour was CD34 & CD68 positive and Ki 67- 5%. Patient was sent to an oncophysician for further management.

3. Discussion

The World Health Organization (2002) defined fibrosarcoma as a malignant tumor, composed of fibroblasts with variable collagen and, in classical cases, it has a herring bone pattern on light microscopy. Conventional fibrosarcoma falls into two main groups, the adult and infantile types, both very uncommon.

Once considered the common adult sarcoma, the incidence of adult fibrosarcoma has declined dramatically over the past several decades. This is due to (i) evolution in the classification of soft tissue tumours (ii) recognition of clinically, morphologically and genetically distinctive subtypes of fibrosarcoma and (iii) increased understanding of the many other mesenchymal and nonmesenchymal tumours that may mimic fibrosarcoma (Figs. 1–4).

Adult Fibrosarcoma (FS) is very rare and it constitutes approximately 1% of adult sarcomas. It is a malignant or intermediate (rarely metastasizing) tumor.

Fibrosarcomas typically present as a non-specific soft tissue mass, sometime in a previously irradiated field or rarely in association with implanted foreign material. Fibrosarcomas are composed of relatively monomorphic spindle cells, showing no more than a moderate degree of pleomorphism; tumors showing a greater degree of pleomorphism
should be classified as undifferentiated pleomorphic sarcomas. The neoplastic cells are characteristically arranged in long, sweeping fascicles that are angled in a chevron-like or herringbone pattern. Storiform areas can be present, but the presence of pronounced storiform growth should suggest fibrosarcoma arising from dermatofibrosarcoma protuberans. The cells have tapered darkly staining nuclei with variably prominent nucleoli and scanty cytoplasm. Mitotic activity is almost always present but variable in quantity. A variable amount of stromal collagen is present, ranging from a delicate intercellular network to zones with diffuse or keloid-like sclerosis or hyalinization. Some fibrosarcomas may contain relatively bland zones mimicking fibromatosis. By immunohistochemistry Fibrosarcomas express vimentin and may occasionally show limited expression of smooth muscle actin, representing myofibroblastic differentiation. CD34- positive tumors showing fibrosarcoma morphology likely represent fibrosarcoma arising in dermatofibrosarcoma protuberans or fibrosarcoma-like progression in malignant solitary fibrous tumour.

Fibrosarcomas metastasize to lungs and bone, especially the axial skeleton, and rarely to lymph nodes. Five year survival rate 39–54% is noted. Surgery remains the principal therapeutic modality in soft tissue sarcoma. Post-operative external beam radiotherapy is helpful to reduce the likelihood of local recurrence in high grade sarcoma.

4. Conclusion

Although rare, fibrosarcoma should also be kept as a differential diagnosis in a case of anterior abdominal wall lumps.

Declaration of Competing Interest

The authors report no declarations of interest.

Source of funding

There were no expenditures in the making of this article and thus no need for funding for this research.

Ethical approval

The study is exempt from ethical approval.

Consent

Written informed consent was obtained from the patient for publication of this case report and accompanying images. The patients identifying details have not been disclosed.

Author contribution

All Authors have contributed to the case report.

Registration of research studies

N/A.

Guarantor

Dr. Zansher Khan Nazar.

Provenance and peer review

Not commissioned, externally peer-reviewed.

Further reading

[1] S. Singer, R.G. Maki, B. O’Sullivan, Soft tissue sarcoma, in: DeVita, Hellman, Rosenberg (Eds.), Cancer: Principles and Practice of Oncology, 9th ed., Lippincott Williams & Wilkins, Philadelphia PA, USA, 2011, pp. 1522–1609.

[2] C. Fisher, E. van den Berg, W.M. Molenar, Adult fibrosarcoma, in: C.D.M. Fletcher, K.K. Unni, F. Mertens (Eds.), World Health Organization Classification of Tumours: Pathology and Genetics of Tumours of Soft Tissue and Bone, IARC Press, Lyon, France, 2002, pp. 100–101.

[3] A. Bahrami, A.L. Folpe, Adult-type fibrosarcoma: a reevaluation of 163 putative cases diagnosed at a single institution over a 48-year period, Am. J. Surg. Pathol. 34 (10) (2010) 1504–1513.

[4] Man H. Shiu, Laurence Weinstein, Steven I. Hajdu, Murray F. Brennan, Malignant soft tissue tumours of the anterior abdominal wall, AMJ Surg. 152 (1989) 416–451.

[5] C.D.M. Fletcher, K. Krishnan Unni, F. Mertens, Pathology and Genetics of Tumours of Soft Tissue and Bone (IARC WHO Classification of Tumours). Adult Fibrosarcoma, WHO, Geneva, 2006, 4.
[6] A.L. Folpe, Fibrosarcoma: a review and update, Histopathology 64 (2014) 12–25.
[7] J.M. Coindre, Immunohistochemistry in the diagnosis of soft tissue tumours, Histopathology 43 (1) (2003) 1–16.
[8] J. Heim-Hall, S.L. Yohe, Application of immunohistochemistry to soft tissue neoplasms, Arch. Pathol. Lab. Med. 132 (2008) 476–489.
[9] R.A. Agha, M.R. Borrelli, R. Farwana, K. Koshy, A. Fowler, D.P. Orgill, For the SCARE Group, The SCARE 2018 statement: updating consensus Surgical Case REport (SCARE) guidelines, Int. J. Surg. 60 (2018) 132–136.