Author's response to reviews

Title: Dermatofibrosarcoma presenting as a nodule in a 75-year-old woman breast: a case report

Authors:

Olivier F Cottier (olivier_cottier@hotmail.com)
Maryse Fiche (Maryse.Fiche@chuv.ch)
Jean-Yves Meuwly (Jean-Yves.Meuwly@chuv.ch)
Jean-François Delaloye (Jean-Francois.Delaloye@chuv.ch)

Version: 7 Date: 6 September 2011

Author's response to reviews: see over
Dear Editors

I would like to submit the revised manuscript of the case with the last corrections on 19th of August 2011 (figures without text, new 4 specific points): Dermatofibrosarcoma protuberans of the breast

man_id=2142484139507041

Thank you very much for your comments and for giving us the opportunity to submit a revised version of our paper, taken into account all the reviewers comments.

Reviewers comments are in Arial bold and the present answer are in Times New Roman. Modifications of the original text are yellow highlighted.

The abstract and the legends of the figures have thus been modified following the reviewers comments and the corrections.

The Reference List has been adapted.

According to your recommendations for authors, we submit the revision online.

Best Regards

Docteur Olivier Cottier
Reviewer's report

Title: Dermatofibrosarcoma of the breast: a case report

Version: 3 Date: 17 May 2011

Reviewer: Christoph Rageth

Which of the following following best describes what type of case report this is?: Unexpected or unusual presentations of a disease

Has the case been reported coherently?: Yes

Is the case report authentic?: Yes

Is the case report ethical?: Yes

Is there any missing information that you think must be added before publication?: Yes

Is this case worth reporting?: Yes

Is the case report persuasive?: Yes

Does the case report have explanatory value?: Yes

Does the case report have diagnostic value?: Yes

Will the case report make a difference to clinical practice?: No

Is the anonymity of the patient protected?: Yes

Comments to authors:

The case is worth to be reported.
b) questions and comments:

question 1:
Ultrasound identifies the lesion in the dermis or subcutaneous tissue without visible connection to the skin and the use of Doppler shows hypervascularisation of the area[3].

question: The sonografic pictures shows a tumor within the skin. I don’t understand, why there should be no connection to the skin.

We fully agree with the reviewer: It is the image of a tumor clearly in connection with the skin. A sebaceous cyst would have had the same aspect without hypervascularisation, melanoma would have been hypervascular, but with skin pigmentation. The text has thus been modified to read:

In most cases, mammography reveals a dense lesion without fat or calcification. Ultrasound exploration identifies the lesion in the dermis or subcutaneous tissue and the use of Doppler shows hypervascularisation of the area [3].

question 2:
Please comment, why you did not make a core biopsy. It would have spared a second surgery and it can be performed under anticoagulation (see recent literature).

We fully agree with the reviewer. A core biopsy is an option in an anticoagulated patient. The text has thus been modified to read:

She has been diagnosed for hypertension, had a pacemaker for cardiac arrhythmia and also was treated by acenocoumarol for a pulmonary embolism in 2008. (...) We proceeded to a quadrantectomy after modifying anticoagulation therapy.

Discussion

(...)
Even in an anticoagulated patient a core biopsy is an option; this biopsy is essential to obtain a diagnosis in order to plan a one-time wide excision.

question 3:

We fully agree with the reviewer. The text was thus changed to read:
Safety margins should be of several centimeters of healthy tissue and should have an anatomical border not invaded at depth. The appropriate distance between free surgical margins and the tumor however is not established. Some authors recommend Mohs surgery (Micrographic surgery using the microscope to trace out the ramifications describe by Mohs in 1978, which offers a complete evaluation of the peripheral and deep margins using frozen section or accelerated standard histology [8,9].) Wide first intention local excision may be preferable in the parts of the body where it is easy (like trunk and limb), resulting in an overall shorter procedure [9]. A plastic surgeon should be present if wound closure difficulties are anticipated.

question 4:
You write, that "Ultrasound-biopsy is essential"
I don't agree, that you need Ultrasound for the biopsy since you could see the tumor and make a core biopsy under visual control.

(Needle) biopsy would have made the preoperative diagnosis and changed the management. We fully agree with the reviewer: Ultrasound in this situation was not obligatory for biopsy. The text has thus been modified to read: (and see answer question 2)

Even in an anticoagulated patient a core biopsy is an option; this biopsy is essential to obtain a diagnosis in order to plan a one-time wide excision.
question 5:

You write, that "MRI is crucial"

I don't agree. You were able to detect the depth of infiltration with ultrasound.

It is true that MRI is not necessary in this case. But it can help to define the depth and infiltration of the tumour. We fully agree with the reviewer. The text has thus been modified to read:

**MRI may be helpful** to define the depth and infiltration of the tumor[5].

question 6:

the sentence "The exact distance from the border of the tumor is not established." is unclear. Do you mean "the appropriate distance"?

Yes. See answer question 3, too. The text has thus been modified to read:

*The appropriate distance between free surgical margins and the tumor however is not established.*

(...)

question 7:

the sentence "Risk of recurrence is not clearly identified" is unclear.

Please distinguish between


please mention the technique of Moh (see above)

The text has thus been modified to read:

The local recurrence rate varies between 1.6% and 50% depending on the type of surgery used [6,10,11]. Mohs surgery results in extremely low local recurrence rates and accordingly a cure rate of up to 98.5% [12].

Regional and distant recurrences are infrequent (regional lymph node metastases and distant metastases, principally in the lung), estimated to less than 5% of cases [11].

See answer question 3 for the technique of Moh.

Quality of written English: Needs some language corrections before being Published

For exemple:

The text has been modified following the suggestions:

a) stylistic and grammatical suggestions:

instead of:

We present here the case of a swiss 75-year-old woman, who underwent twenty-one years ago a right mastectomy and axillary dissection followed by radiotherapy and breast reconstruction by prosthesis for invasive ductal carcinoma of the right breast, had a mass in her left breast.

suggestion:

We present here the case of a swiss 75-year-old woman, who twenty-one years ago underwent a right mastectomy and axillary dissection followed by radiotherapy and breast reconstruction with prosthesis for invasive ductal carcinoma of the right breast and now presented with a mass in her left breast.

instead of:

We proceed to a quadrantectomy...

suggestion:

We proceeded to a quadrantectomy
The postoperative recovery was rapidly favorable.
suggestion:
The postoperative recovery was favorable.

instead of:
This allows for additional safety margins of at least 5 cm

suggestion:
This allowed for additional safety margins of at least 5 cm.

Text was reviewed by other English medical person. Modifications of the original text are green highlighted. Acknowledgement to Dr Maryse Fiche and Dr David Baud.

MF re-wrote the pathology section.

We thank Dr Christoph Rageth for critical review of the manuscript.
Dermatofibrosarcoma presenting as a nodule in a 75-year-old woman breast: a case report

Olivier Cottier ¹*, Maryse Fiche ², Jean-Yves Meuwly ³, Jean-François Delaloye ¹

¹ Dr O. Cottier  Chef de clinique, Professeur associé J-F Delaloye, Médecin chef, Département de Gynécologie-Obstétrique et Génétique, Centre Hospitalier Universitaire Vaudois, Lausanne, Suisse

² Dr M Fiche, Médecin adjointe, Institut Universitaire de Pathologie, Centre Hospitalier Universitaire Vaudois, Lausanne, Suisse

³ Professeur associé J-Y Meuwly, Service de Radiodiagnostic et de Radiologie Interventionnelle, Centre Hospitalier Universitaire Vaudois, Lausanne, Suisse

*Corresponding author

Email

OC : Olivier_cottier@hotmail.com Olivier.Cottier@chuv.ch

MF: Maryse.Fiche@chuv.ch

JYM: Jean-Yves.Meuwly@chuv.ch

JFD: Jean-Francois.Delaloye@chuv.ch
Abstract

Introduction:
Dermatofibrosarcoma protuberans is a rare neoplasm of soft tissues and its location in the breast is extremely uncommon. Confusion is possible with another primary breast lesion.

Case presentation:
A 75-year-old Caucasian woman was diagnosed in 1990 with an invasive ductal carcinoma of the right breast. The patient underwent a right mastectomy with axillary dissection, followed by radiotherapy and breast reconstruction. She presented in 2010 with a mass in her left breast. Mammography revealed a dish-shaped skin nodule formation in the upper outer quadrant of the left breast. Echography confirmed the presence of a lesion measuring 14 x 8 mm. Based on imaging, the diagnosis was a probable angiosarcoma. Due to the presence of a pacemaker for cardiac arrhythmia and a full-anticoagulation therapy for a pulmonary embolism, MRI and biopsy were not done. We proceeded directly to a quadrantectomy and the final diagnosis revealed a Dermatofibrosarcoma protuberans, 1, 8 cm in greatest microscopic dimension located at 0,1cm of the upper surgical margin. To insure the wide resection margins required for this type of neoplasm, a re-excision was performed.

Conclusion:
Dermatofibrosarcoma protuberans of the breast is an uncommon discovery. The aim of this case report is to highlight the importance of the surgical procedure in case of discovery of Dermatofibrosarcoma protuberans. Re-excision may be necessary to insure adequate resection margins.
Introduction:

Dermatofibrosarcoma protuberans (DFSP) is a rare neoplasm of soft tissues described in 1924 by Darier and Ferrand as “progressive recurrent dermatofibroma” and by Hoffmann in 1925 as “dermatofibrosarcoma protuberans”. This tumor is a dermal spindle cell tumor of intermediate malignancy characterized by a slow evolution, a significant risk of local recurrence, and a low rate of metastatization [1]. DFSP typically presents during early or middle adult life, in all parts of the body but more frequently on the trunk, extremities, and head and neck [1]. Its location in the breast is extremely rare and very few cases have been reported in the literature. Confusion is possible with another primary breast lesion [2,3].

Case Presentation:

We present here the case of a Caucasian 75-year-old woman who was diagnosed in 1990 with an invasive ductal carcinoma of the right breast. The patient underwent a right mastectomy with axillary dissection, followed by radiotherapy and breast reconstruction. She has been diagnosed for hypertension, had a pacemaker for cardiac arrhythmia and also was treated by acenocoumarol for a pulmonary embolism in 2008. The patient presented in 2010 with a mass in her left breast. Mammography showed a dish-shaped skin nodule in the upper outer quadrant of the left breast (Figures 1 and 2). Echography confirmed the presence of a lesion measuring 14 x 8 mm. Based on imaging, the diagnosis was a probable angiosarcoma (Figures 3 and 4). MRI was not feasible due to the pacemaker. We proceeded to a quadrantectomy after modifying anticoagulation therapy. The postoperative recovery was uneventful.

At gross examination, the specimen measured 11x11x4 cm and harbored a 1x1cm well delineated dermal nodule close to the upper surgical margin. The cut section showed a solid whitish tumor with foci of hemorrhage (Figures 5 and 6). Microscopic examination revealed a proliferation of bland spindle cells arranged in a storiform pattern extending into hypodermal fat (Figures 7 and 8). These cells diffusely and strongly expressed the CD34 antigen, and were negative for CD31 and S-100 protein (Figure 9). Diagnosis was: Dermatofibrosarcoma protuberans, 1, 8 cm in greatest microscopic dimension located at 0,1cm of the upper surgical margin. To insure the wide resection margins required for this type of neoplasm, a re-excision was performed, up to the pectoral muscle fascia including some muscle fibers. Pathology examination showed no residual tumor. This re-excision allowed for additional safety margins of at least 5 cm. No additional treatment was done. The patient is well with no evidence of recurrence one year after surgery.

Discussion:

Dermatofibrosarcoma protuberans represents about 1% of soft tissue sarcomas with an estimated incidence of 0.8-5.0 cases per million per year[2,4]. Forty-seven percent of DFSP cases occur on the trunk [1]. Breast localization of DFSP is rare [3,5]. In most cases, mammography reveals a dense lesion without fat or calcification. Ultrasound exploration identifies the lesion in the dermis or subcutaneous tissue and the use of Doppler shows hypervascularisation of the area [3]. Even in an anticoagulated patient a core biopsy is an option; this biopsy is essential to obtain a diagnosis in order to plan a one-time wide excision. MRI may be helpful to define the depth of infiltration of the tumor [5].
Pathologic examination reveals monotonous spindle cells arranged in a storiform pattern, extending to the hypodermal fat in a typical honeycomb pattern [6]. The differential diagnosis includes mainly benign fibrous histiocytoma, and also neurofibroma and myxoid liposarcoma [1]. DFSP cells are typically diffusely positive for CD34, which indicates a close link of this neoplasm with normal CD34 positive dermic dendritic cells [1]. Genetic abnormalities associated with DFSP include a supernumerary ring chromosome corresponding to low amplification of sequences of chromosomes 17 and 22, and/or the presence of t(17;22) a balanced reciprocal translocation. This translocation fuses the platelet-derived growth factor beta-chain (PDGF-beta) gene to the collagen type 1alpha1 (COL1A1) gene [6]. The fusion protein, which has a PDGF-beta-type effect, participates in cell proliferation and can be blocked by tyrosine kinase inhibitors [7].

Safety margins should be of several centimeters of healthy tissue and should have an anatomical border not invaded at depth. The appropriate distance between free surgical margins and the tumor however is not established. Some authors recommend Mohs surgery (Micrographic surgery using the microscope to trace out the ramifications describe by Mohs in 1978, which offers a complete evaluation of the peripheral and deep margins using frozen section or accelerated standard histology [8,9,].) Wide first intention local excision may be preferable in the parts of the body where it is easy (like trunk and limb), resulting in an overall shorter procedure [9]. A plastic surgeon should be present if wound closure difficulties are anticipated.

The local recurrence rate varies between 1.6% and 50% depending on the type of surgery used [6,10,11]. Mohs surgery results in extremely low local recurrence rates and accordingly a cure rate of up to 98.5% [12]. Regional and distant recurrences are infrequent (regional lymph node metastases and distant metastases, principally in the lung), estimated to less than 5% of cases [11]. Complementary radiation therapy or chemotherapy seem not to bring any benefit [13]. However, specific tyrosine kinase inhibitors (e.g. Imatinib, which inhibits the PDGFB receptor) appear promising [7]. Long-term follow-up requires strict monitoring every 6-12 months with ultrasound and biopsy in cases of suspected recurrence. The 5-year survival rate of patients with DFSP is over 99% [14,15].

Conclusion:

Breast localization of Dermatofibrosarcoma protuberans is extremely uncommon and can mimic a primary breast tumor. As in other locations of DFSP, surgical excision with adequate resection margins is recommended to ensure local control of the disease. A plastic surgeon should be present if a difficulty with the wound closure by first intention is to be expected.

Consent

Written informed consent was obtained from the patient for publication of this case report and accompanying images. A copy of the written consent is available for review by the Editor-in-Chief of this journal.

Competing interest

The authors declare that they have no competing interests.
Authors’ contributions

OC, JFD analyzed and interpreted the patient data. MF performed histological examination JYM performed imaging and ultrasonography. OC was a major contributor in writing the manuscript. MF wrote the pathology section. All authors read and approved the final manuscript.

Reference List
