Breast-implant associated anaplastic large cell lymphoma; an indolent disease with a highly complex genome

Daphne de Jong, MD PhD
Amsterdam UMC, VU University Medical Center
Amsterdam
The Netherlands
d.dejong2@amsterdamumc.nl
Case 8

Patient: female, 59 years old
Right mastectomy for breast cancer in 2014
In January 2019 gradual enlargement of the right breast caused by peri-prosthetic seroma
A cytological aspirate was performed, followed by explantation of the implant, capsulectomy and placement of a new breast implant.
Cytological aspirate CVU19-1780
Capsulectomy specimen
Positive: CD30, CD4, GranzymeB
Negative: CD3, CD2, CD5, CD7, CD8, CD56, EBER, ALK1, CD20, CD79a, PAX5
Breast-implant-associated anaplastic large cell lymphoma (BIA-ALCL)

Are we indeed flooded with seroma aspirates?

Since 2015 some increase in submission of cytological aspirates in the implant context are noted, but numbers remain small.

- **cytological aspirates for seroma without implant***
- **cytological aspirates for seroma with implant***

* Uncorrected data, for relative comparisons only
Challange for cytological screening and diagnosis
early onset – late onset seroma

Differential diagnosis to reactive proliferations
• Post-operative seroma collection
• Acute inflammatory infiltrate – bacterial infection
• Chronic inflammatory response – silicone bleeding/leakage

Malignant disease
• Relapsed breast cancer
• De novo breast cancer
• Metastatic malignancies (carcinoma/melanoma)
• Primary diffuse large B-cell lymphoma
• Other primary malignant lymphoma atypes
• Secondary malignant lymphoma localization
Diagnostic approach of seroma aspirates

Morphological assessment
Sufficient quality
Malignant/reactive
Carcinoma/lymphoma

Immunophenotyping on cell block
CD30
B-cell markers
T-cell markers
Epithelial markers
CD68

Di Napoli et al PlosONE 2017;doi.org/10.1371/journal.pone.0181097,
Barbé et al, Cytopathology 2018, 2019;00:1-7
Seroma-type BIA-ALCL is a very indolent disease

seroma-space only mass

Restricted to seroma-space and capsule

Infiltration beyond the capsule and/or involved lymph nodes
Conclusion

• BIA-ALCL is a very rare disease
• A standardized cytological approach of seroma fluids is feasible in daily practice and should be performed as guided by the clinical context
• BIA-ALCL shares JAK/STAT activation as a final common pathway with other ALCL classes as a dominant oncogenetic driver and may be largely driven by specific copy number alterations
• Specific genetic alterations may serve as a basis for future screening assays (pSTAT3, CNA)

By eradication of the direct cause, BIA-ALCL may eventually be a vanishing disease
Dutch BIA-ALCL Consortium
Plastic Surgery/Dutch Breast Implant Registry
Mintsje de Boer, MUMC+, Maastricht
René van der Hulst, MUMC+, Maastricht
Hinne Rakhorst, Ziekenhuisgroep Twente

Epidemiology/PALGA
Floor van Leeuwen, NKI-AVL, Amsterdam
Michael Hauptmann, NKI-AVL, Amsterdam
Lucy Overbeek, PALGA, Houten
Esther van den Broek, PALGA, Houten

Hematology
Jan Paul de Boer, NKI-AVL, Amsterdam

VU University Medical Center
Tjitske Los-de Vries
Nathalie Hijmering
Phylicia Stathi
Matias Mendeville
Marit Roemer
Bauke Ylstra

d.dejong2@amsterdamumc.nl
# EAHP SH 2020

## 20th Meeting of the European Association for Haematopathology

**Overlaps, borderlines and mimics**

**Dubrovnik, Croatia**  
**11–16 September 2020**

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<td>1 Apr 2020</td>
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