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Breast Implant Associated- Anaplastic Large Cell Lymphoma (BIA- ALCL)

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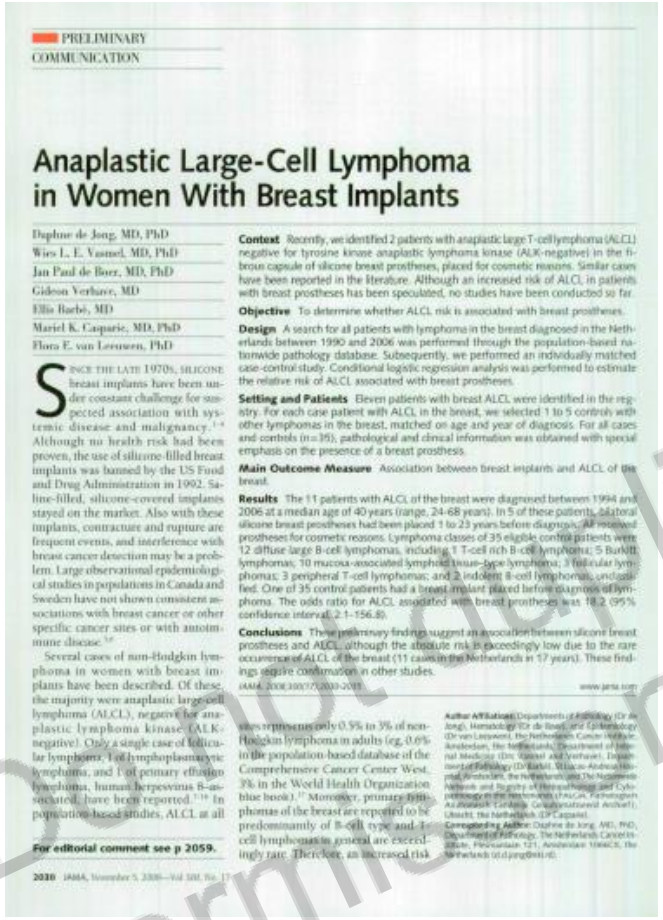
BREAST IMPLANT-ASSOCIATED ANAPLASTIC LARGE CELL LYMPHOMA
BIA-ALCL



PRELIMINARY COMMUNICATION

Anaplastic Large-Cell Lymphoma in Women With Breast Implants

Daphne de Jong, MD, PhD
Wies L. E. Vasmel, MD, PhD
Jan Paul de Boer, MD, PhD
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Context Recently, we identified 2 patients with anaplastic large T-cell lymphoma (ALCL) negative for tyrosine kinase anaplastic lymphoma kinase (ALK-negative) in the fibrous capsule of silicone breast prostheses, placed for cosmetic reasons. Similar cases have been reported in the literature. Although an increased risk of ALCL in patients with breast prostheses has been speculated, no studies have been conducted so far.

Objective To determine whether ALCL risk is associated with breast prostheses.

Design A search for all patients with lymphoma in the breast diagnosed in the Netherlands between 1990 and 2006 was performed through the population-based nationwide pathology database. Subsequently, we performed an individually matched case-control study. Conditional logistic regression analysis was performed to estimate the relative risk of ALCL associated with breast prostheses.

Setting and Patients Eleven patients with breast ALCL were identified in the registry. For each case patient with ALCL in the breast, we selected 1 to 5 controls with other lymphomas in the breast, matched on age and year of diagnosis. For all cases and controls (n=35), pathological and clinical information was obtained with special emphasis on the presence of a breast prosthesis.

Main Outcome Measure Association between breast implants and ALCL of the breast.

Results The 11 patients with ALCL of the breast were diagnosed between 1994 and 2006 at a median age of 40 years (range, 24-68 years). In 5 of these patients, bilateral silicone breast prostheses had been placed 1 to 23 years before diagnosis. All received prostheses for cosmetic reasons. Lymphoma classes of 35 eligible control patients were 12 diffuse large B-cell lymphomas, including 1 T-cell rich B-cell lymphoma; 5 Burkitt lymphomas; 10 mucosa-associated lymphoid tissue–type lymphoma; 3 follicular lymphomas; 3 peripheral T-cell lymphomas; and 2 indolent B-cell lymphomas, unclassified. One of 35 control patients had a breast implant placed before diagnosis of lymphoma. The odds ratio for ALCL associated with breast prostheses was 78.2 (95% confidence interval, 2.1-156.8).

Conclusions These preliminary findings suggest an association between silicone breast prostheses and ALCL, although the absolute risk is exceedingly low due to the rare occurrence of ALCL of the breast (11 cases in the Netherlands in 17 years). These findings require confirmation in other studies.

JAMA. 2008;300(17):2030-2035 www.jama.com

Since the late 1970s, silicone breast implants have been under constant challenge for suspected association with systemic disease and malignancy.[1-4] Although no health risk had been proven, the use of silicone-filled breast implants was banned by the US Food and Drug Administration in 1992. Saline-filled, silicone-covered implants stayed on the market. Also with these implants, contracture and rupture are frequent events, and interference with breast cancer detection may be a problem. Large observational epidemiological studies in populations in Canada and Sweden have not shown consistent associations with breast cancer or other specific cancer sites or with autoimmune disease.[5-7]

Several cases of non-Hodgkin lymphoma in women with breast implants have been described. Of these, the majority were anaplastic large-cell lymphoma (ALCL), negative for anaplastic lymphoma kinase (ALK-negative). Only a single case of follicular lymphoma, 1 of lymphoplasmacytic lymphoma, and 1 of primary effusion lymphoma, human herpesvirus 8–associated, have been reported.[8-10] In population-based studies, ALCL at all sites represents only 0.5% to 3% of non-Hodgkin lymphoma in adults (eg, 0.6% in the population-based database of the Comprehensive Cancer Center West, 3% in the World Health Organization blue book).[11] Moreover, primary lymphomas of the breast are reported to be predominantly of B-cell type and T-cell lymphomas in general are exceedingly rare. Therefore, an increased risk

For editorial comment see p 2059.

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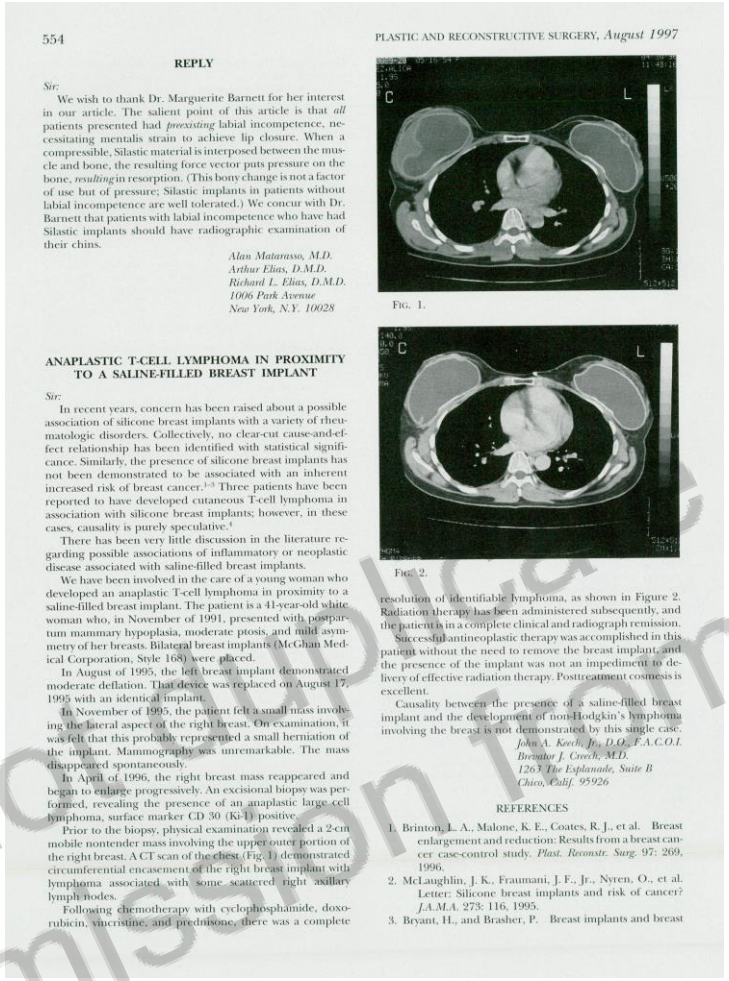
BREAST IMPLANT-ASSOCIATED ANAPLASTIC LARGE CELL LYMPHOMA (BIA-ALCL) IS AN UNCOMMON NEOPLASIA OCCURRING IN WOMEN WITH EITHER COSMETIC OR RECONSTRUCTIVE BREAST IMPLANTS, WITH AN ESTIMATED RISK OF 1 TO 3 PER 1 MILLION PERSONS/YEAR WITH BREAST IMPLANTS



554 PLASTIC AND RECONSTRUCTIVE SURGERY, *August 1997*

REPLY

Sir:

We wish to thank Dr. Marguerite Barnett for her interest in our article. The salient point of this article is that *all* patients presented had *preexisting* labial incompetence, necessitating mentalis strain to achieve lip closure. When a compressible, Silastic material is interposed between the muscle and bone, the resulting force vector puts pressure on the bone, *resulting* in resorption. (This bony change is not a factor of use but of pressure; Silastic implants in patients without labial incompetence are well tolerated.) We concur with Dr. Barnett that patients with labial incompetence who have had Silastic implants should have radiographic examination of their chins.

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ANAPLASTIC T-CELL LYMPHOMA IN PROXIMITY TO A SALINE-FILLED BREAST IMPLANT

Sir:

In recent years, concern has been raised about a possible association of silicone breast implants with a variety of rheumatologic disorders. Collectively, no clear-cut cause-and-effect relationship has been identified with statistical significance. Similarly, the presence of silicone breast implants has not been demonstrated to be associated with an inherent increased risk of breast cancer.[1-3] Three patients have been reported to have developed cutaneous T-cell lymphoma in association with silicone breast implants; however, in these cases, causality is purely speculative.[4]

There has been very little discussion in the literature regarding possible associations of inflammatory or neoplastic disease associated with saline-filled breast implants.

We have been involved in the care of a young woman who developed an anaplastic T-cell lymphoma in proximity to a saline-filled breast implant. The patient is a 41-year-old white woman who, in November of 1991, presented with postpartum mammary hypoplasia, moderate ptosis, and mild asymmetry of her breasts. Bilateral breast implants (McGhan Medical Corporation, Style 168) were placed.

In August of 1995, the left breast implant demonstrated moderate deflation. That device was replaced on August 17, 1995 with an identical implant.

In November of 1995, the patient felt a small mass involving the lateral aspect of the right breast. On examination, it was felt that this probably represented a small herniation of the implant. Mammography was unremarkable. The mass disappeared spontaneously.

In April of 1996, the right breast mass reappeared and began to enlarge progressively. An excisional biopsy was performed, revealing the presence of an anaplastic large-cell lymphoma, surface marker CD 30 (Ki-1) positive.

Prior to the biopsy, physical examination revealed a 2-cm mobile nontender mass involving the upper outer portion of the right breast. A CT scan of the chest (Fig. 1) demonstrated circumferential encasement of the right breast implant with lymphoma associated with some scattered right axillary lymph nodes.

Following chemotherapy with cyclophosphamide, doxorubicin, vincristine, and prednisone, there was a complete

FIG. 1.

FIG. 2.

resolution of identifiable lymphoma, as shown in Figure 2. Radiation therapy has been administered subsequently, and the patient is in a complete clinical and radiograph remission.

Successful antineoplastic therapy was accomplished in this patient without the need to remove the breast implant, and the presence of the implant was not an impediment to delivery of effective radiation therapy. Posttreatment cosmesis is excellent.

Causality between the presence of a saline-filled breast implant and the development of non-Hodgkin's lymphoma involving the breast is not demonstrated by this single case.

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3. Bryant, H., and Brasher, P. Breast implants and breast

THE FIRST CASE OF ALCL IN A PATIENT WITH BREAST IMPLANTS WAS REPORTED BY KEECH AND CREECH IN 1997

SINCE THAT TIME A GROWING BODY OF LITERATURE ON THE POTENTIAL ASSOCIATION BETWEEN BREAST IMPLANTS AND ALCL HAS BEEN PUBLISHED

THE REAL INCIDENCE AND RISK FOR DEVELOPING BIA-ALCL IS DIFFICULT TO ESTIMATE, AS THE PREVALENCE OF WOMEN WITH BREAST IMPLANTS WORLDWIDE IS UNKNOWN

IN 2011 THE FDA ADVISED SCIENTIFIC COMMUNITY ABOUT THE POTENTIAL ASSOCIATION BETWEEN BREAST IMPLANTS AND THE DEVELOPMENT OF ALCL

AS OF JANUARY 2020 THE FDA RECEIVED A TOTAL OF 733 MEDICAL DEVICE REPORTS FOR BIA-ALCL, INCLUDING 36 DEATHS GLOBALLY

THE CURRENTLY ESTIMATED INCIDENCE OF BIA-ALCL IN THE US IS 2.3 PER 1 MILLION PERSONS/YEAR WITH BREAST IMPLANTS

Doren EL et al.
United States Epidemiology of breast implant-associated anaplastic large cell lymphoma.
PRS 2017

AT THE EU LEVEL, THE EU TASKFORCE ON BIA-ALCL COMPOSED OF COMPETENT AUTHORITIES RECEIVED 398 BIA-ALCL REPORTS

OF WHICH 345 (86.7%) WERE CONFIRMED BIA-ALCL CASES FROM VARIOUS EUROPEAN COUNTRIES

INCIDENCE OF BIA-ALCL IN ITALY
2.8 PER 100,000 PERSONS/YEAR
WITH BREAST IMPLANTS

Ministero della Salute

Campanale et al.
22 cases of BIA-ALCL: Awareness and outcome tracking from the Italian Ministry of Health.
PRS 2018

WHAT IS BIA-ALCL?

IN 2016 THE WHO PROVISIONALLY CLASSIFIED BREAST IMPLANT-ASSOCIATED ANAPLASTIC LARGE CELL LYMPHOMA (BIA-ALCL) AS A NEW LYMPHOMA ASSOCIATED TO BREAST IMPLANTS

THE NCCN ESTABLISHED EVIDENCE-BASED CONSENSUS GUIDELINES FOR THE DIAGNOSIS AND TREATMENT OF THE DISEASE

NCCN GUIDELINES ON BIA-ALCL WERE SUBSEQUENTLY RECOGNIZED BY THE US FDA AND INTERNATIONAL PLASTIC SURGERY SOCIETIES TO HELP PHYSICIANS UNDERSTAND THE DISEASE AND PROVIDE RELIABLE DIAGNOSIS AND TREATMENT

2019 NCCN Consensus Guidelines on the Diagnosis and Treatment of Breast Implant-Associated Anaplastic Large Cell Lymphoma (BIA-ALCL)

Mark W. Clemens, MD, FACS; Eric D. Jacobsen, MD; and Steven M. Horwitz, MD

Aesthetic Surgery Journal
2019, Vol 39(S1) S3–S13

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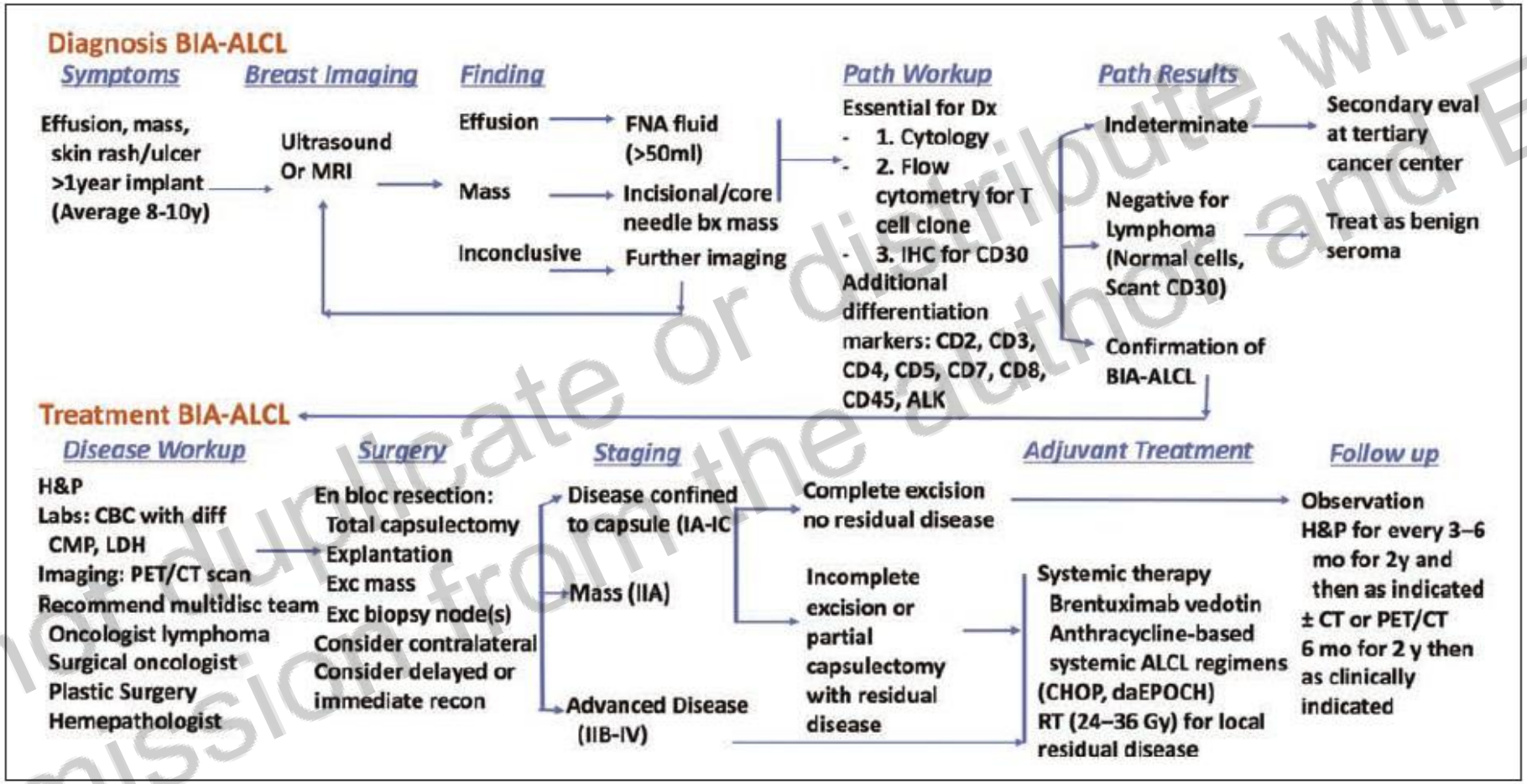


A MULTIDISCIPLINARY TEAM APPROACH IS ESSENTIAL FOR THE MANAGEMENT OF BIA-ALCL

BIA-ALCL IS GENERALLY AN INDOLENT AND LOCALIZED DISEASE WITH EXCELLENT PROGNOSIS WHEN PATIENTS RECEIVE SURGICAL EXCISION

IT REMAINS UNCLEAR WHETHER TIMELY DIAGNOSIS CAN MITIGATE INVASIVE DISEASE OR WHETHER BIOLOGIC VARIABILITY OF THE TUMOR EXISTS AND AFFECTS PROGNOSIS

ADVANCED DISEASE BIA-ALCL MAY REQUIRE ADJUVANT TREATMENTS SUCH AS CHEMOTHERAPEUTIC AGENTS, RADIATION THERAPY AND STEM CELL TRANSPLANT DEPENDING ON PATHOLOGY, STAGE OF DISEASE AND DISEASE RECURRENCE

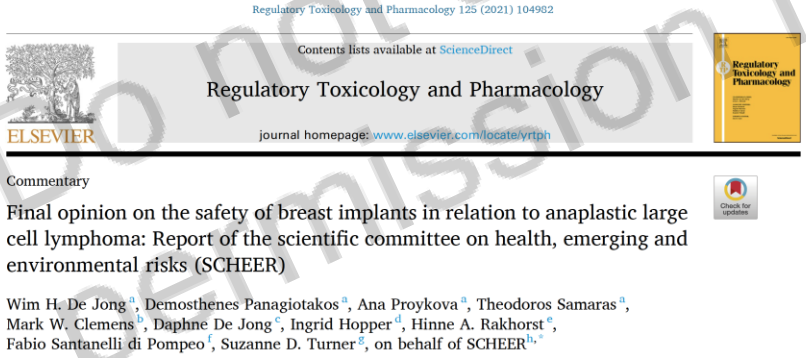
ETIOPATHOGENESIS

ALTHOUGH SEVERAL ASSUMPTIONS HAVE BEEN PROPOSED, THE MECHANISMS THAT UNDERPIN BIA-ALCL ETIOLOGY AND PATHOGENESIS ARE NOT WELL UNDERSTOOD YET

CURRENT HYPOTHESES INCLUDE GENETIC DRIVERS, CHRONIC INFLAMMATION RESULTING EITHER FROM BACTERIAL CONTAMINATION, SHELL SHEDDING OF PARTICULATES, OR SHELL SURFACE CHARACTERISTICS LEADING TO FRICTION OR BY IMPLANT ASSOCIATED REACTIVE COMPOUNDS

SEVERAL STUDIES HAVE BEEN CONDUCTED TO INVESTIGATE THE ASSOCIATION BETWEEN BIA-ALCL AND TEXTURED IMPLANTS

TEXTURED IMPLANTS COULD BE ABLE TO PROMOTE CHRONIC INFLAMMATION AS A POTENTIAL ETIOLOGICAL FACTOR



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Commentary

Final opinion on the safety of breast implants in relation to anaplastic large cell lymphoma: Report of the scientific committee on health, emerging and environmental risks (SCHEER)

Wim H. De Jong [a], Demosthenes Panagiotakos [a], Ana Proykova [a], Theodoros Samaras [a], Mark W. Clemens [b], Daphne De Jong [c], Ingrid Hopper [d], Hinne A. Rakhorst [e], Fabio Santanelli di Pompeo [f], Suzanne D. Turner [g], on behalf of SCHEER [h,*]

CHRONIC BACTERIAL ANTIGEN STIMULATION AND SUSTAINED T-CELL PROLIFERATION MIGHT SUPPORT BIA-ALCL INITIATION AND PROGRESSION

IT IS WIDELY RECOGNIZED THE PROMINENT ROLE OF CHRONIC INFLAMMATION AND BACTERIA IN PROMOTING LYMPHOMA DEVELOPMENT, AS CLEARLY DEMONSTRATED IN HELICOBACTER-PYLORI ASSOCIATED PRIMARY GASTRIC LYMPHOMA

GENETIC PREDISPOSITION

SOME STUDIES IDENTIFIED THE PRESENCE OF SOMATIC MUTATIONS, MAINLY IN GENES OF THE JAK/STAT SIGNALING PATHWAY AS WELL IN TP53 AND DNMT3A

HUMAN LEUKOCYTE ANTIGEN (HLA) POLYMORPHISMS CAN CONFER AN INCREASED RISK ALSO FOR THE DEVELOPMENT OF BIA-ALCL AS DESCRIBED IN OTHER FROMS OF LYMPHOMA

blood

American Society of Hematology
2021 L Street NW, Suite 900,
Washington, DC 20036
Phone: 202-776-0544 | Fax 202-776-0545
editorial@hematology.org

Increased prevalence of BRCA1/2 mutations in women with macro-textured breast implants and anaplastic large cell lymphoma of the breast

Tracking no: BLD-2019-004498R3

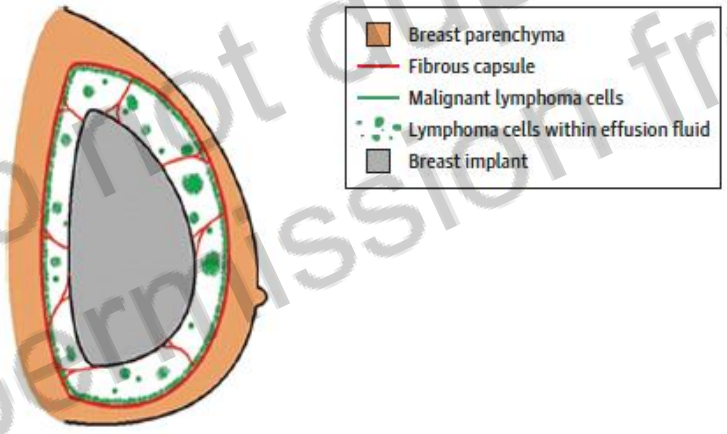
Mintsje De Boer (Maastricht University Medical Center, Netherlands) Michael Hauptmann (Brandenburg Medical School Theodor Fontane, Germany) Nathalie Hijmering (Amsterdam UMC, VU University Medical center, Netherlands) Carel van Noesel (Amsterdam University Medical Centers, Location AMC, Netherlands) Hinne Rakhorst (Medisch Spectrum Twente, Netherlands) Hanne Meijers-Heijboer (Amsterdam UMC, Amsterdam Medical Center, Netherlands) Jan Paul Boer (Netherlands Cancer Institute Antoni van Leeuwenhoek hospital, Netherlands) René van der Hulst (Maastricht University Medical Center, Netherlands) Daphne De Jong (VU University Medical Center, Netherlands) Flora van Leeuwen (The Netherlands Cancer Institute, Netherlands)

CLINICAL PRESENTATION AND DIAGNOSIS

THE MOST COMMON PRESENTATION OF BIA-ALCL IS A LARGE SPONTANEOUS PERI-PROSTHETIC FLUID COLLECTION OCCURRING AT LEAST 1 YEAR AND ON AVERAGE 7 TO 10 YEARS FOLLOWING COSMETIC OR RECONSTRUCTIVE IMPLANTATION WITH A BREAST IMPLANT

IN ADDITION TO LARGE FLUID COLLECTIONS AND DELAYED SEROMAS, 8 TO 24% OF PATIENTS WILL PRESENT WITH AN ASSOCIATED PALPABLE MASS AND 4 TO 12% WITH A LYMPHADENOPATHY

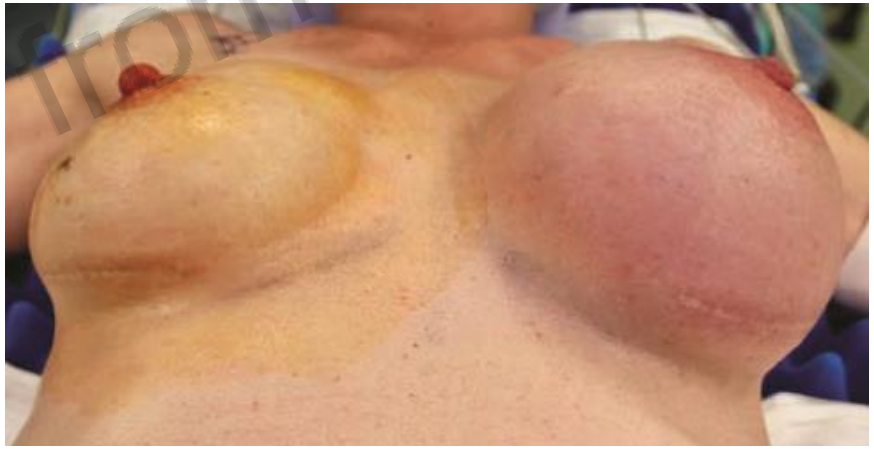
LESS COMMONLY DESCRIBED (<5% OF CASES) ARE LOCAL AND SYSTEMIC SYMPTOMS INCLUDING SKIN RASH, FEVERS AND CAPSULAR CONTRACTURE



PATIENTS WITH A LARGE FLUID COLLECTION MAY HAVE FLUID LEVELS AROUND AN IMPLANT AND CONSEQUENTLY MAY BE MISDIAGNOSED WITH AN IMPLANT RUPTURE

AS A GENERAL RULE, IMPLANT RUPTURES DO NOT INCREASE THE OVERALL VOLUME OF A BREAST

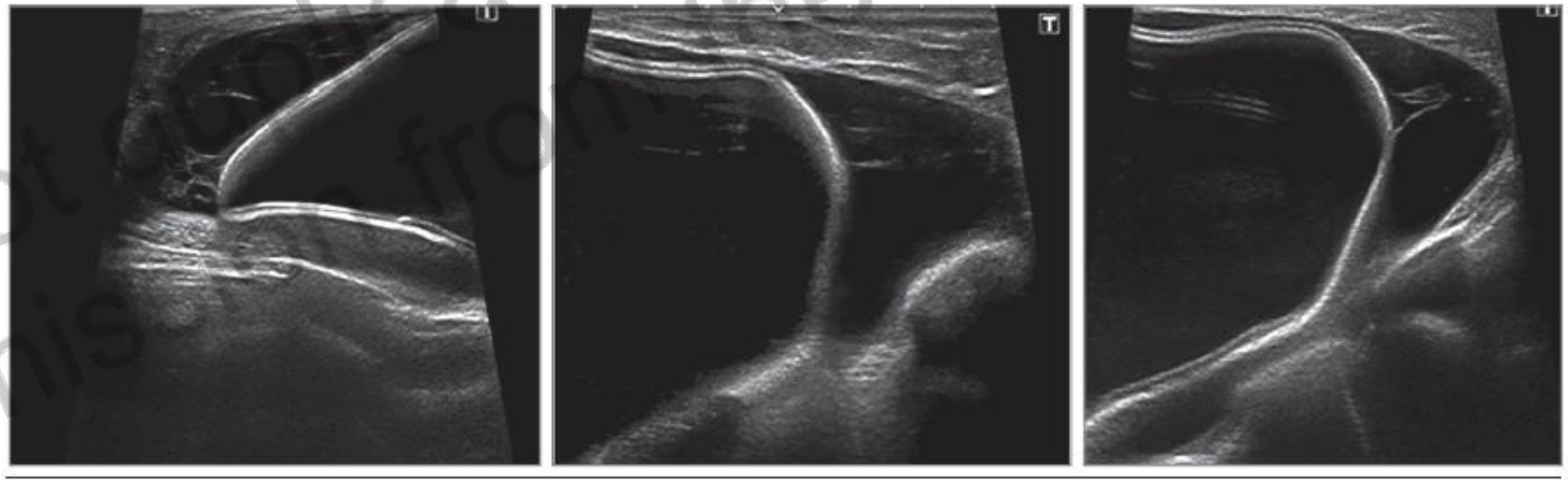
OTHER COMMON ETIOLOGIES FOR A DELAYED SEROMA ARE INFECTION AND RECENT TRAUMA TO THE CHEST WALL, WHICH SHOULD BE INVESTIGATED AND EXCLUDED

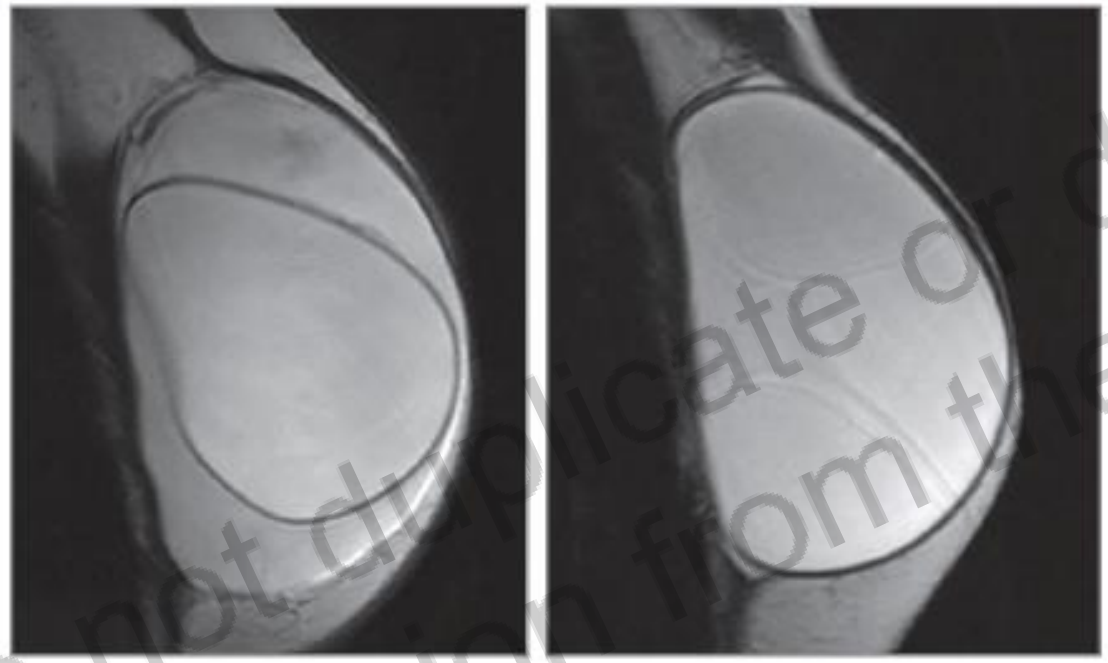


EVERY IMPLANT WILL LIKELY HAVE A MINIMAL AMOUNT OF SURROUNDING FLUID (5-10 ML) AND THIS INCIDENTAL FINDING IN ASYMPTOMATIC PATIENTS DOES NOT REQUIRE BIOPSY OF FURTHER INVESTIGATION

THE INITIAL WORKUP OF AN ENLARGED BREAST SHOULD INCLUDE US EVALUATION FOR FLUID COLLECTION , BREAST MASSES AND ENLARGED REGIONAL LYMPH NODES

AXILLARY LYMPH NODE INVOLVEMENT IS MOST COMMONLY FOLLOWED BY INTERNAL MAMMARY AND SUPRACLAVICULAR METASTASES, WHEREAS INVOLVEMENT OF NON REGIONAL LYMPH NODES IS VERY UNCOMMON





IN CASES WHERE US IS EQUIVOCAL, MRI IS RECOMMENDED FOR FURTHER CHARACTERIZATION

FINE NEEDLE ASPIRATION (US-GUIDED)
IS THE OPTIMAL METHOD TO SAMPLE A PERI-PROSTHETIC FLUID COLLECTION

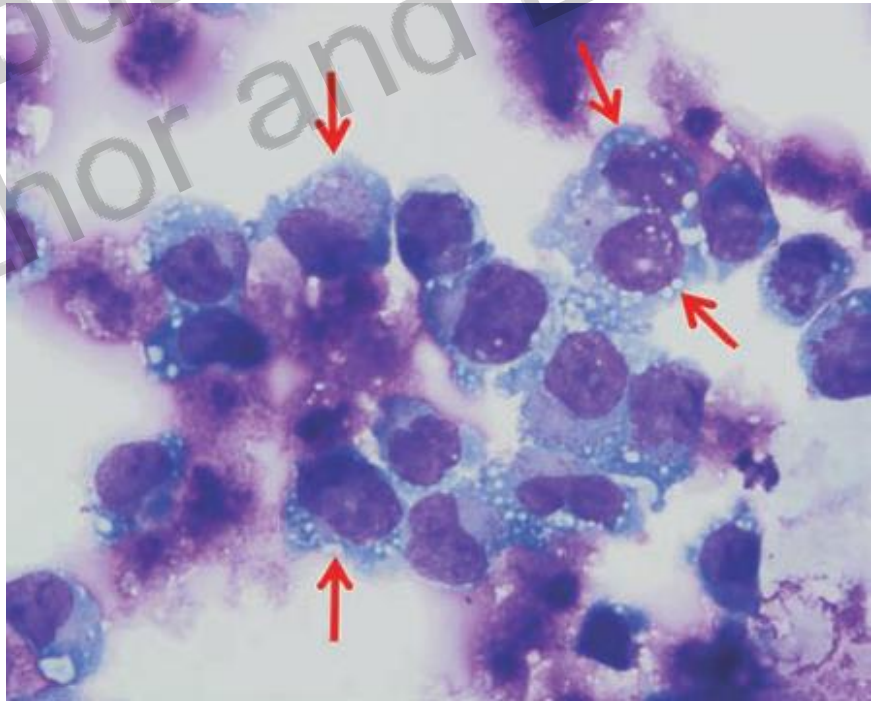
AS MUCH FLUID AS POSSIBLE SHOULD BE COLLECTED (MINIMUM 50 ML)
TO AID THE DIAGNOSIS OF DISEASE

A SUSPICIOUS MASS REQUIRES TISSUE BIOPSY AND EVALUATION

SPECIMENS SHOULD BE SENT FOR CELL MORPHOLOGY BY CYTOLOGY, CD30 IMMUNOHISTOCHEMISTRY AND FLOW CYTOMETRY FOR EVALUATION, QUANTIFICATION AND CHARACTERIZATION OF T CELLS WITHIN THE SPECIMEN

CD30 IMMUNOHISTOCHEMISTRY IS FUNDAMENTAL BUT NOT PATHOGNOMONIC BECAUSE CD30 EXPRESSION IS NONSPECIFIC AND CD30 CAN BE EXPRESSED ON BENIGN INFLAMMATORY CELLS

RARE CD30 POSITIVE LYMPHOCYTES WITH NORMAL MORPHOLOGY IS CONSIDERED A NORMAL FINDING AND DOES NOT REQUIRE FURTHER INVESTIGATION



THE DIAGNOSIS OF BIA-ALCL REQUIRES CAREFUL CLINICO PATHOLOGIC CORRELATION

IT IS EXTREMELY IMPORTANT TO EXCLUDE OTHER MALIGNANCIES OR BENIGN PROCESSES THAT MAY MIMIC BIA-ALCL

ADDITIONAL BIOMARKERS MAY BE REQUIRED
TO ESTABLISH THE DIAGNOSIS AND EXCLUDE OTHER MALIGNANCIES
(CD2, CD3, CD4, CD5, CD7, CD8, CD45 AND ANAPLASTIC LYMPHOMA KINASE (ALK))

BIA-ALCL IS ALWAYS ALK NEGATIVE

HOWEVER OTHER SYSTEMIC AND CUTANEOUS FORMS OF ALCL ARE FREQUENTLY ALK NEGATIVE, THIS FINDING ALONE DOES NOT ESTABLISH A DIAGNOSIS OF BIA-ALCL

HEMATOPATHOLOGY CONSULTATION AT A TERTIARY CANCER CENTER IS STRONGLY ENCOURAGED TO ESTABLISH OR EXCLUDE A DIAGNOSIS OF BIA-ALCL

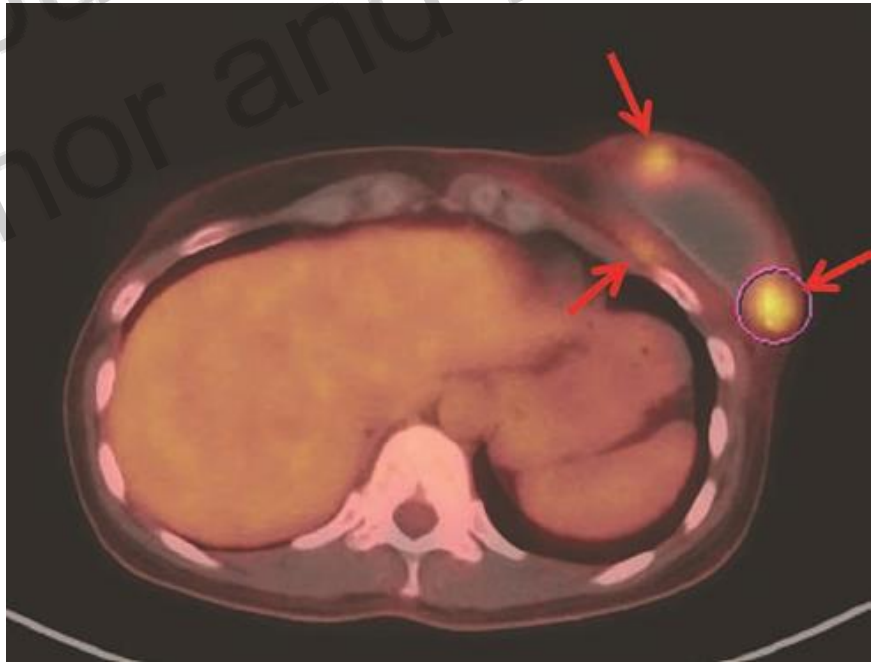
PREOPERATIVE WORKUP IN CONFIRMED BIA-ALCL CASES

NEED OF A MULTIDISCIPLINARY TEAM APPROACH (ONCOLOGISTS, PATHOLOGISTS, SURGICAL ONCOLOGISTS AND PLASTIC SURGEONS)

COMPLETE BLOOD COUNT WITH DIFFERENTIAL, COMPREHENSIVE METABOLIC PANEL, LACTATE DEHYDROGENASE

BONE MARROW BIOPSY WHEN HIGH SUSPICION OF SYSTEMIC ALCL (PATIENTS WITH AGGRESSIVE LOCAL INVASION OR LYMPH NODE METASTASIS)

PREOPERATIVE PET/CT SCAN TO DEMONSTRATE ASSOCIATED CAPSULAR MASSES AND CHEST WALL INVOLVEMENT, USEFUL "ROADMAP" FOR SURGICAL EXCISION



CLASSIFICATION

NON-HODGKIN LYMPHOMA IS USUALLY STAGED WITH THE LUGANO MODIFICATION OF THE ANN ARBOR STAGING SYSTEM

IE DISEASE IS LIMITED TO A SINGLE EXTRANODAL SITE (BREAST OR IMPLANT CAPSULE), AND IIE EXTRANODAL DISEASE WITH SPREAD TO LOCAL LYMPH NODES

THIS CLASSIFICATION DOES NOT ACCOUNT FOR CAPSULAR INVASION OR PENETRATION, SO TNM SOLID TUMOR STAGING SYSTEM HAS BEEN PROPOSED

TNM classification		TNM stage		
T: Tumor extent		IA	T1 N0 M0	35-70%
T1	Confined to effusion or a layer on luminal side of capsule	IB	T2 N0 M0	3-11%
T2	Early capsule infiltration	IC	T3 N0 M0	8-13%
T3	Cell aggregates or sheets infiltrating the capsule	IIA	T4 N0 M0	8-25%
T4	Lymphoma infiltrates beyond the capsule	IIB	T1-3 N1 M0	3-5%
N: Lymph node		III	T4 N1-2 M0	3-9%
N0	No lymph node involvement	IV	Tany Nany M1	1-4%
N1	One regional lymph node (+)			
N2	Multiple regional lymph nodes (+)			
M: Metastasis				
M0	No distant spread			
M1	Spread to other organs/distant sites			

OVERALL SURVIVAL RATE OF 94% AND 91% AT 3 AND 5 YEARS

SOLID TUMOR TNM STAGING PREDICTS SURVIVAL AND RECURRENCE MORE ACCURATELY THAN ANN ARBOR STAGING

ALTHOUGH INDOLENT EARLY ON, BIA-ALCL IS A MALIGNANCY AND SHOULD NOT BE CONSIDERED BENIGN AT ANY STAGE

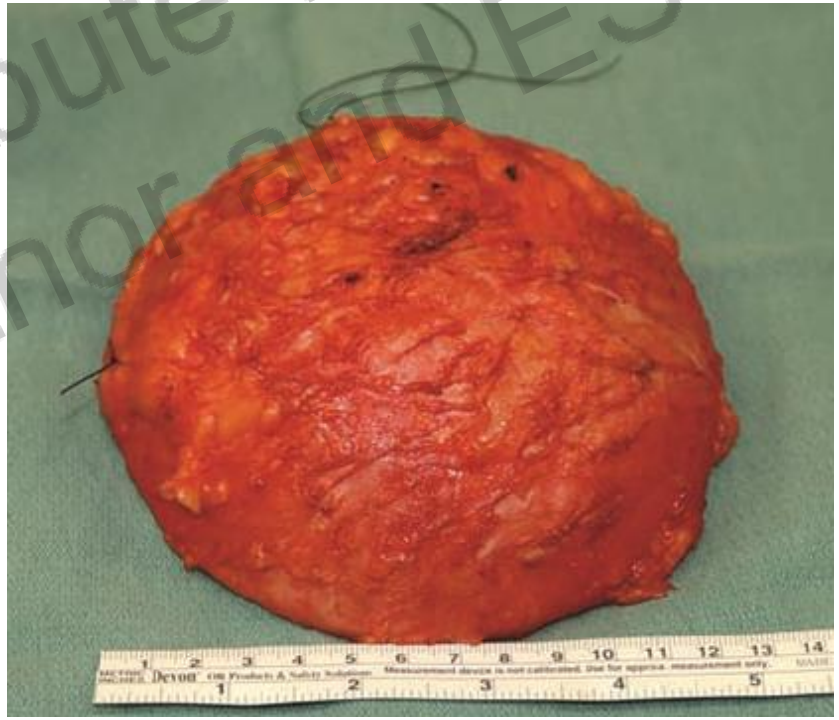
SURGICAL TREATMENT WITH EN BLOC EXPLANTATION

THE GOALS OF SURGERY SHOULD BE TO REMOVE THE IMPLANT WITH THE SURROUNDING FIBROUS CAPSULE AND ANY ASSOCIATED CAPSULE MASS

COMPLETE SURGICAL EXCISION IMPROVE OVERALL SURVIVAL AND EVENT-FREE SURVIVAL COMPARED WITH ALL OTHER THERAPEUTIC INTERVENTIONS

SURGICAL SPECIMENS SHOULD BE ORIENTED TO ALLOW FOR THE ANATOMIC LOCATION OF THE DISEASE

THERE IS NO CLEAR ROLE FOR RADICAL MASTECTOMY OR SENTINEL LYMPH NODE BIOPSY



ALL ATTEMPTS SHOULD BE MADE TO GAIN COMPLETE SURGICAL EXCISION
BECAUSE RETAINED OR UNRESECTABLE DISEASE INDICATES THE NEED FOR ADJUVANT TREATMENTS

IN THE CASE OF A UNILATERALLY DIAGNOSED BIA-ALCL PATIENT, A CONTRALATERAL PROPHYLACTIC IMPLANT REMOVAL WITH TOTAL CAPSULECTOMY IS RECOMMENDED AS THERE HAVE BEEN SEVERAL CASES OF BILATERAL DISEASE REPORTED WORLDWIDE TO DATE

IN NON-SYMPTOMATIC PATIENTS WITH TEXTURED IMPLANTS OR IMPLANTS WITH A UNKNOWN SURFACE, IMPLANT REMOVAL WITH OR WITHOUT TOTAL CAPSULECTOMY FOR THE SINGLE PURPOSE OF BIA-ALCL PROPHYLAXIS IS NOT RECOMMENDED DUE TO THE VERY LOW INCIDENCE OF THIS DISEASE

HOWEVER, SOME PATIENTS MAY REQUEST REMOVAL OF THE IMPLANT AND CAPSULE, PARTICULARLY PATIENTS WITH MANUFACTURER-RECALLED IMPLANTS OR THE REPORTED HIGH-RISK BREAST IMPLANTS

ANY SURGERY SHOULD FOLLOW AN INFORMED CONSENT DISCUSSION ON THE RELATED SURGICAL RISKS AND THAT A RISK OF BIA-ALCL MAY PERSIST FOLLOWING SURGERY

ADJUVANT TREATMENTS

NO PROSPECTIVE TRIALS TO GUIDE THE MANAGEMENT OF PATIENTS WITH DISSEMINATED DISEASE

TREATMENT PARADIGMS ARE GENERALLY EXTRAPOLATED FROM THE TREATMENT OF PRIMARY CUTANEOUS AND SYSTEMIC ALCL

LOCAL OR INVOLVED SITE **RADIATION THERAPY** WITH 24 TO 36 GRAY IS SUGGESTED FOR PATIENTS WITH LOCAL RESIDUAL DISEASE, POSITIVE MARGINS OR UNRESECTABLE DISEASE WITH CHEST WALL INVASION

SYSTEMIC THERAPY IS WARRANTED IN PATIENTS WITH LUGANO STAGE II-IV OR TNM IIB-IV

ONCOLOGISTS CAN CONSIDER EITHER A STANDARD APPROACH FOR SYSTEMIC ALCL (NCCN GUIDELINES FOR FIRST-LINE THERAPY OF A PERIPHERAL T-CELL LYMPHOMA) SUCH AS COMBINATION ANTHRACYCLINE-BASED CHEMOTHERAPY OR A COMBINATION WITH BRENTUXIMAB VEDOTIN

DISEASE SURVEILLANCE

PATIENTS WHO HAVE A COMPLETE RESPONSE WITH TREATMENTS CAN BE MONITORED CLINICALLY EVERY 3 TO 6 MONTHS FOR 2 YEARS AND THEN AS CLINICALLY INDICATED

THE ROLE OF ROUTINE RADIOGRAPHIC SURVEILLANCE IS UNCLEAR, BUT EITHER A CHEST/ABDOMINAL/PELVIC CT SCAN WITH CONTRAST OR PET SCAN COULD BE CONSIDERED EVERY 6 MONTHS FOR 2 YEARS, THEN ONLY AS CLINICALLY INDICATED

TAKE HOME MESSAGES

BIA-ALCL IS AN UNCOMMON T-CELL LYMPHOMA OCCURRING IN WOMEN WITH BREAST IMPLANTS

BIA-ALCL IS GENERALLY AN INDOLENT AND LOCALIZED DISEASE WITH EXCELLENT PROGNOSIS WHEN PATIENTS RECEIVE SURGICAL EXCISION (EN BLOC EXPLANTATION)

THE MOST COMMON PRESENTATION OF BIA-ALCL IS A LARGE SPONTANEOUS PERI-PROSTHETIC FLUID COLLECTION OCCURRING AT LEAST 1 YEAR AND ON AVERAGE 7 TO 10 YEARS FOLLOWING IMPLANTATION WITH A BREAST IMPLANT

FINE NEEDLE ASPIRATION (US-GUIDED) IS THE OPTIMAL METHOD TO SAMPLE A PERI-PROSTHETIC FLUID COLLECTION

SPECIMENS SHOULD BE SENT FOR CELL MORPHOLOGY BY CYTOLOGY, CD30 IMMUNOHISTOCHEMISTRY AND FLOW CYTOMETRY FOR EVALUATION, QUANTIFICATION AND CHARACTERIZATION OF T CELLS WITHIN THE SPECIMEN

TAKE HOME MESSAGES

ALTHOUGH SEVERAL ASSUMPTIONS HAVE BEEN PROPOSED, THE MECHANISMS THAT UNDERPIN BIA-ALCL ETIOLOGY AND PATHOGENESIS ARE NOT WELL UNDERSTOOD YET

CURRENT HYPOTHESES INCLUDE GENETIC DRIVERS, CHRONIC INFLAMMATION RESULTING EITHER FROM BACTERIAL CONTAMINATION, SHELL SHEDDING OF PARTICULATES, OR SHELL SURFACE CHARACTERISTICS LEADING TO FRICTION OR BY IMPLANT ASSOCIATED REACTIVE COMPOUNDS

REPORTING OF NEW BIA-ALCL CASES BY THE NATIONAL CLINICAL REGISTRIES IS CRITICALLY IMPORTANT TO OBTAIN A BETTER ESTIMATE OF THE RISK OF BIA-ALCL FOR PATIENTS WITH A BREAST IMPLANT