Significant Improvement of Symptoms Post-Explantation in Women Suffering from Breast Implant Illness Despite no Detectable Difference in the Proinflammatory Marker CD30

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Introduction

• Breast Implant Illness (BII)) is a term used to describe a constellation of systemic symptoms thought to be caused by breast implants[1]. These symptoms are broad in presentation and appear at fluctuating times after implantation surgery but can become so severe that many women choose to pursue implant explantation[3].
• Serum CD30, an immunologic proinflammatory marker, has been shown to be elevated in multiple autoimmune conditions with similar symptom profiles[5;6;7;8;9;10;12].

Methods

• A total of 13 patients were followed from their BII consultation to 3 months postoperatively after implant en-bloc/total capsulectomy and were included in the final analysis.
• Patients with a current diagnosis of an autoimmune disease and/or are currently pregnant were excluded.
• CD30 levels were analyzed using ELISA and symptoms with paired t-test analysis.
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Results

• Preoperatively, patients had 31.6 symptoms with an average symptom severity ranking at 1.94.

• Postoperatively, the average number of symptoms reported decreased significantly to 5.6 (p=.000086) as well as symptom severity to 0.995 (p=.00011).

• No significant difference was found in symptom severity ranking between implant types (p=0.80).

• No significant difference was found in serum CD30 after implant removal (p=.9402).
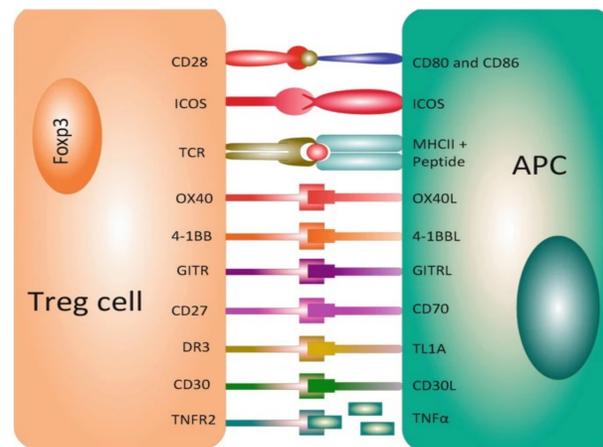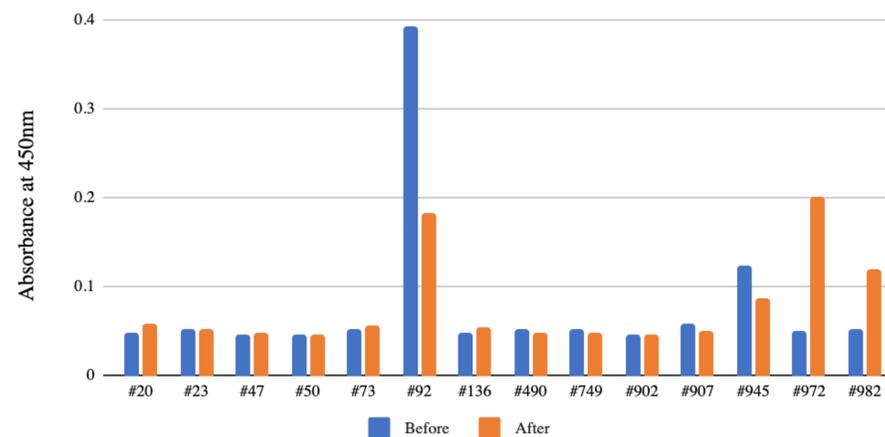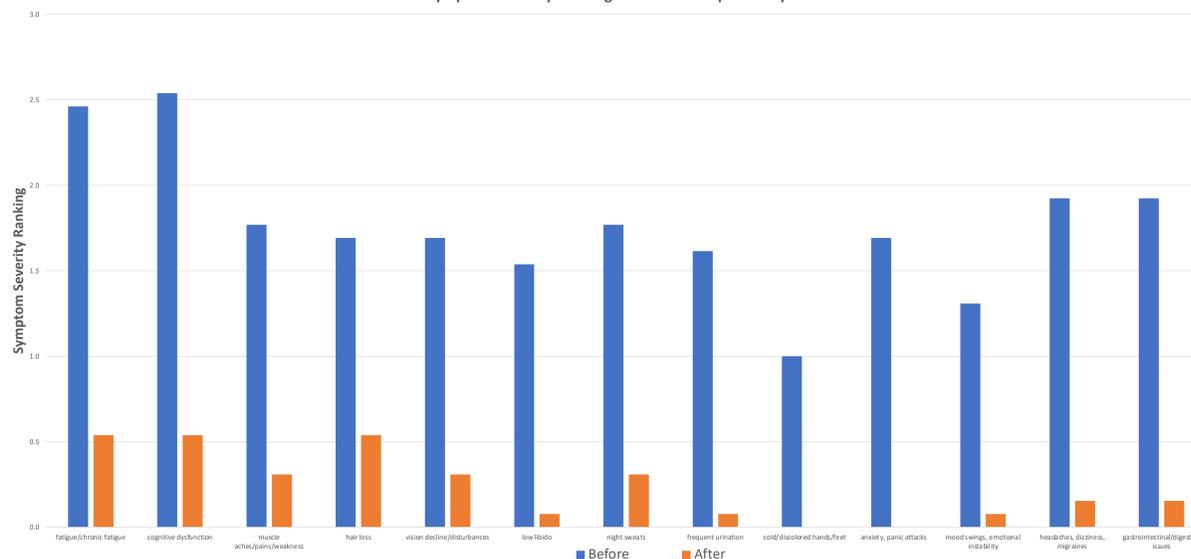
CD30/CD30L Immunologic Interaction

Photo from Wing & Sakaguchi (2019)

Serum CD30 Pre and Post Operative Level Comparison

Symptom Severity Ranking Pre and Post Operatively

Discussion

• To our knowledge, this is the first study to examine serum CD30 as a possible immunological marker in the setting of BII.
• Our research further demonstrated the correlation between BII symptom improvement and implant removal while controlling for autoimmune co-diagnoses and including both saline and silicone implant patients.
• Most of the significant symptoms can be grouped into a neurologic category which is similar to findings in prior BII studies[17].
• While there remains to be no validated pathophysiologic explanation, diagnostic testing, or diagnostic criteria for BII, patients continue to experience these symptoms at high severity and show symptom improvement after implant removal thus showing the need for ongoing research to further clarify the underlying pathophysiology.
• Given that BII appears to show a predominance in neurological symptoms, it may be useful to explore more neuro-specific autoimmunity biomarkers in the future.

Limitations

• We had a smaller sample size than expected due to loss to follow up. While 22 patients signed consent forms, only 13 completed all required study visits and surveys.
• The questionnaire used amongst BII clinics and thus in this research remains very broad with some symptoms grouped together. Additionally, the survey has not been independently validated. A more precise break-down of symptoms with physician corroboration as well as objective measures would increase the validity of studies.