

The Diagnosis and Management of Patients With Findings Consistent With a Breast Implant Associated–Somatic Symptom Disorder (BIA-SSD)

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Background: Psychological factors seem to play a significant role in the perception and magnification of somatic symptoms in patients with breast implant illness (BII). Further, recent studies have shown that some patients with self-reported BII have findings consistent with a breast implant–associated somatic symptom disorder (BIA-SSD). The aim of this work was to provide guidelines for the diagnosis and treatment of BIA-SSD.

Methods: Findings from the current literature combined with both surgical and psychological therapeutic principles were used to develop methods for diagnosing and managing patients with BIA-SSD.

Results: Algorithms for the diagnosis of SSD associated with breast implants, as well as treatment options, are presented so that plastic surgeons can identify, counsel, diagnose, and offer treatment to patients with BII and findings consistent with BIA-SSD.

Conclusions: Plastic surgeons are in a unique position to identify self-reported BII patients with signs of BIA-SSD and offer help in navigating treatment options. In addition to providing information to patients about somatic symptoms and breast implants, surgeons should refer patients for a medical workup to rule out medical causes of symptoms. For patients with symptoms and a desire to maintain breast implants, referral to a qualified mental health professional trained in SSD therapy may be beneficial. For patients desiring removal of their implants for BII symptoms, explantation with the most conservative possible procedure is recommended. (*Plast Reconstr Surg Glob Open* 2025;13:e6735; doi: [10.1097/GOX.0000000000006735](https://doi.org/10.1097/GOX.0000000000006735); Published online 1 May 2025.)

INTRODUCTION

Patients with self-reported breast implant illness (BII) often report systemic symptoms that they attribute to their breast implants. Currently, there are no definitive data that identify a direct causal relationship between breast implants and somatic symptoms, although explantation with or without capsulectomy appears to reduce anxiety and somatic symptoms in some patients.^{1,2} Although the physical cause of somatic symptoms in patients with breast implants remains unknown, psychological factors seem to

play a significant role in the perception and magnification of symptoms.

Significant progress has been made in identifying the psychological features of BII. Patients who feel their implants are the source of their somatic symptoms tend to have high measurements of anxiety demonstrated through psychometric testing and tend to have more medically diagnosed anxiety and depression disorders.^{1,3,4} Recent studies have also demonstrated that some patients self-reporting BII symptoms have findings supporting a breast implant–associated somatic symptom disorder (BIA-SSD), with high levels of anxiety and elevated somatic symptom measurements coupled with persistent thoughts of somatic symptoms that interfere with normal life activities.⁵

The aim of this article was to familiarize plastic surgeons and other health professionals with the ability to identify patients who have somatic symptoms and worries about their breast implants, manifested by anxiety that interferes with functioning and life quality. These patients can manifest a BIA-SSD. Identification of BIA-SSD and treatment options for patients identified with this condition are presented.

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SOMATIC SYMPTOM DISORDER

In 2013, the American Psychiatric Association⁶ introduced the diagnosis, “somatic symptom disorder” or SSD in the Diagnostic and Statistical Manual of Mental Disorders (DSM-5). For the diagnosis of SSD, there must be 3 specific criteria present, as shown in Table 1.

The symptoms patients experience might either have an identified cause or remain without a known cause. The diagnosis is based on the presence of anxiety linked to persistent thoughts and worries about symptoms that have a duration of at least 6 months. A medical cause for symptoms may or may not be present, but if a medical cause is identified, the feelings and behaviors related to the medical cause are excessive or out of proportion to the severity of the medical cause.

If a patient with somatic symptoms has breast implants and believes that her implants are the cause of her symptoms, she may be diagnosed with BIA-SSD if a high level of anxiety associated with breast implants is coupled with persistent thoughts and symptoms for at least 6 months. On the other hand, SSD may also be diagnosed if a patient has the same symptoms and a known medical diagnosis (eg, arthritis) that can cause these symptoms, but believes her symptoms are caused by her breast implants, rather than her arthritis. Therefore, SSD may be present with or without a medical condition that may be the cause of somatic symptoms.

ETIOLOGY OF SSD

The current etiology of SSD is believed to be modulated through a combination of biological, environmental, and psychological factors.^{7,8} Psychological stress and anxiety are believed to affect neural circuits in the brain that control peripheral functions and create somatic symptoms. Symptoms without an identified biomedical cause are prevalent in clinical practice. In one study, only 16% of common symptoms, including those frequently attributed to BII, such as fatigue, insomnia, headache, and dizziness, were found to have a clear organic cause.⁹ SSD and related disorders are relatively common, affecting an estimated 5%–7% of the general population.⁶ SSD is more common in women than men, with women experiencing more numerous, frequent, and intense somatic symptoms than men.¹⁰ Genetic factors,

Table 1. Current American Psychiatric Association Criteria for the Diagnosis of SSD

Criteria 1: One or more somatic symptoms that are distressing or result in significant disruption of daily life
Criteria 2: Excessive thoughts, feelings, or behaviors related to the somatic symptoms or associated health concerns and manifested by at least 1 of the following:
1. High level of anxiety about health or symptoms
2. Disproportionate and persistent thoughts about the seriousness of one's health
3. Excessive time and energy devoted to these symptoms or health concerns
Criteria 3: Although any 1 somatic symptom may not be continuously present, the state of being symptomatic is typically more than 6 mo

Takeaways

Question: What is the basis for the diagnosis of breast implant-associated somatic symptom disorder (BIA-SSD) and what are the treatment options?

Findings: BIA-SSD may be found in some patients with high levels of anxiety, persistent thoughts and worries about their breast implants, and somatic symptoms that they attribute to their breast implants. The criteria for the diagnosis and management of these patients are reviewed.

Meaning: The diagnosis of patients who present with findings consistent with BIA-SSD will allow appropriate treatment, either nonsurgical or surgical.

personality disorders, adverse life events, neglect and abuse, and organic illness have been found to be associated with SSD.^{7,11,12}

Up to 50% of patients with SSD have anxiety and depressive disorders.¹³ A patient who presents with an anxiety/depressive disorder who has significant somatic symptoms that are present for greater than 6 months and adversely affecting daily life quality could be diagnosed with concurrent anxiety/depressive disorder and SSD.

RECENT STUDIES LINKING BII TO MENTAL HEALTH

Recent studies with patient data have demonstrated high levels of measured anxiety by psychological testing and an increased history of anxiety and depressive disorders among patients self-reporting BII symptoms.^{1,3,4} Patients reporting BII symptoms have been shown to possess a higher rate of preexisting, diagnosed anxiety-related disorders, with more than 40% of patients with BII symptoms demonstrating a diagnosed, preexisting anxiety or anxiety/depressive disorder. Finally, a recent report found that patients with BII symptoms demonstrated high levels of anxiety and elevated somatic symptom scores, findings supporting a diagnosis of BIA-SSD. An SSD prevalence of 70.2% was found in patients with high anxiety levels and BII symptoms demonstrating that a significant subset of patients with somatic symptoms have findings consistent with BIA-SSD.⁵

Negative publicity, primarily through social media websites, is the dominant source of misinformation regarding breast implants.^{14,15} Previous studies have demonstrated that the internet is the source of negative information for the majority of patients who believe that they have BII.¹⁵ Sensationalized media coverage associated with suspicion of medical expertise and science further creates sources of anxiety for susceptible patients. Patients with anxiety-related disorders are susceptible to heightened fears and distress, which tend to produce, exacerbate, and perpetuate somatic symptoms.

MECHANISM FOR DEVELOPMENT OF SSD IN BREAST IMPLANT PATIENTS

The primary pathway for the development of BIA-SSD involves exposure to concerning information leading to

anxiety and symptom exacerbation. This pathway would be initiated when patients seek information from the internet, social media, or other sources that promote that illness is associated with breast implants. There are many BII websites that provide incorrect or false information, often not backed by medical research, which can be disturbing and anxiety-provoking. This information creates a nocebo effect that can heighten anxiety, especially in patients with hypervigilant personality traits. Anxiety, worry about one's health, and predisposing factors can give rise to somatic symptoms. This mechanism is supported by recent studies linking social media use to elevated C-reactive protein levels and enhanced somatic symptoms and medical illnesses.^{16,17}

A second pathway involves patients who are already at heightened risk for SSD or may have SSD preceding their surgery. BIA-SSD can be triggered in these susceptible patients by stressful events, including surgery or diagnosis of a new illness.¹⁸ Patients who already have high levels of somatic symptoms present or are at high risk for developing SSD based on predisposing factors may develop SSD following breast implant surgery. Negative information promoted online or through social media may lead to patients attributing their symptoms to their breast implants.

CAUSES OF SOMATIC SYMPTOMS IN PATIENTS WITH BREAST IMPLANTS

We have identified 4 types of patients who present with somatic symptoms associated with their breast implants.

1. **Patients with underlying anxiety and/or medically diagnosed anxiety disorders and breast implants:** These patients often meet the criteria for SSD associated with worry about their breast implants. Typically, these patients have no other medical diagnosis that can be detected that can produce the symptoms they describe. These symptoms are real and manifest from anxiety and somatic amplification. Cognitive behavioral therapy (CBT) and psychotherapy can improve symptoms for patients desiring the retention of their breast implants. If treatment of anxiety or SSD is not desired or is not successful at reducing symptoms, removing breast implants with or without the implant capsule often improves symptoms, as the source of the patient's anxiety is eliminated.
2. **Patients may present with self-reported BII symptoms, and medical workup is able to identify or propose a cause of symptoms or a likely factor that is enhancing symptoms:** Hypothyroidism, fibromyalgia, chronic fatigue syndrome, autoimmune disorders, menopause, and many other diseases or conditions produce similar symptoms as self-reported BII.¹⁹ These patients will benefit from a workup by their primary care physician or internist to see if a cause of symptoms can be identified and treated. Treating an underlying condition may improve or resolve symptoms. Removing breast implants may result in minimal, partial, or no improvement of symptoms, especially if a medical condition is the source of symptoms.

3. **Some patients present with self-reported BII symptoms, medical workup is negative, and the cause of somatic symptoms may be unknown:** These patients typically do not have manifestations of SSD, may or may not have increased levels of anxiety, and desire their implants to be removed. For patients with symptoms that seem to have a rheumatological basis or where further workup may be indicated, referral to a rheumatologist may assist in the evaluation of uncommon conditions, such as lupus, or entities such as Schoenfeld or autoimmune/inflammatory syndrome induced by adjuvants syndrome.^{20,21} Explantation with or without capsulectomy can be performed by patient request or if a medical benefit is anticipated, and often reduces symptoms.
4. **A smaller group of patients may demonstrate a neuroplastic pain syndrome:** Typically, these patients do not meet the criteria for SSD, and medical workup does not demonstrate a disease or condition that accounts for somatic symptoms. Some experts believe that these patients may demonstrate neuroplastic pain syndrome, which could explain intermittent pain and somatic symptoms.²² Neuroplastic pain syndrome is believed to play a role in chronic back pain, headaches, fibromyalgia, and other forms of chronic pain with somatic symptoms and is caused by psychophysiological processes rather than structural causes. Further research will be required to further characterize these patients.

A diagnosis algorithm of patients with breast implants and with somatic symptoms that they feel are caused by their breast implants is presented in [Figure 1](#).

DISCUSSING BIA-SSD WITH PATIENTS: UNDERSTANDING THE PSYCHOLOGY

A central challenge for clinicians in discussing SSD with patients is that patients themselves typically attribute these symptoms to a biological disease process.⁷ In BII, patients attribute their symptoms to a range of biological processes, including an immune response to a foreign object or toxic chemicals in the implant or shell.²³ Discussions of SSD, emotional distress, or psychological processes contributing to symptom experience may be mismatched with patients' own beliefs about what is causing their symptoms, leaving a large gap for physicians to bridge.

The key first step to bridging this gap is fostering a trusting doctor–patient relationship on which to base further exploration and communication. Patients are likely to feel apprehensive about being dismissed or told that their symptoms are “not real” during consultations. It is important to approach these conversations with empathy regarding the patient's experience.

A number of actions that build trust and reduce anxiety in clinical consultations have been identified.²⁴ First, provide reassurance that the patient's symptoms are real and that efforts will be made to help them develop an understanding of what they are experiencing.²⁵ Second, encourage patients to ask questions, approach conversations without judgement, and be receptive to addressing

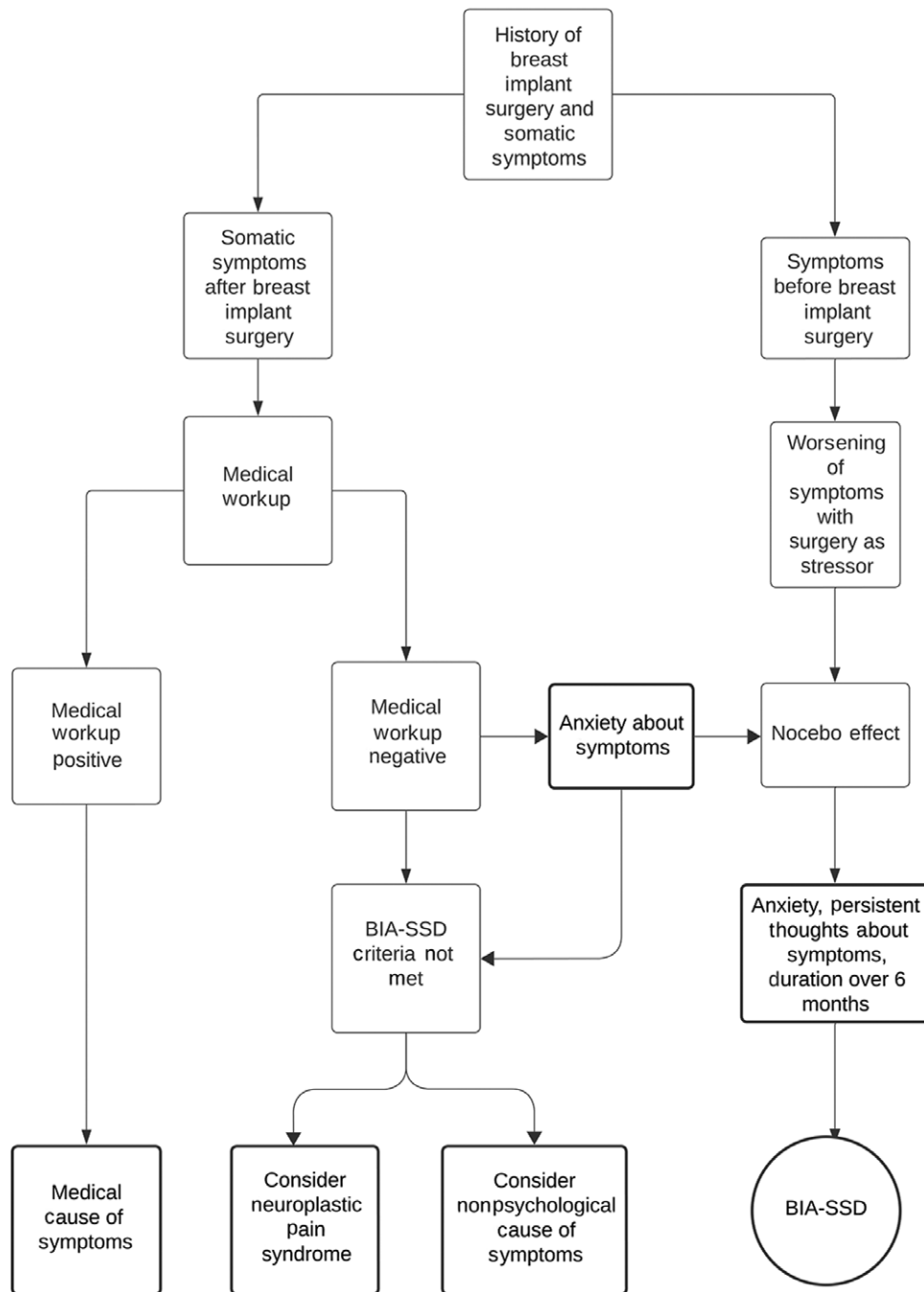


Fig. 1. Flowchart for the diagnosis of patients with a history of breast implant surgery and somatic symptoms they feel are related to their implants.

patient concerns. Third, where laboratory tests or imaging studies are performed, offer to share the findings in a collaborative approach and help them understand the results. Finally, ask patients about their preferences and goals for treatment and involve them in decisions about their care.

There are a number of recommendations that have been put forward for exploring a diagnosis of SSD.⁷ Consider the possibility of SSD as early as possible for patients with persistent somatic symptoms. Keep in mind that these symptoms are real and distressing, the result

of complex biopsychosocial processes. When having discussions with patients presenting with persistent somatic symptoms, look for signs that might indicate emotional or physical distress. Additional information that may be helpful includes physical symptoms and life stresses, signs of anxiety and depression, and drug or alcohol misuse. Use the information gathered to gain an understanding of where the patient is coming from and how they may best be offered treatment through referral to a mental health specialist trained to treat SSD.

It may also be helpful to start to disentangle somatic symptoms from the disease. The experience of subjective somatic symptoms is common even in otherwise healthy individuals.²⁶ Symptoms can occur without an underlying identifiable disease process, with SSD being an extreme example. Disease processes can also occur in the absence of identifiable symptoms, particularly in the early stages. In addition, psychological factors can also amplify the experience of symptoms occurring as a result of an underlying disease process.²⁷

HOW TO DISCUSS BIA-SSD WITH PATIENTS WHO MAY NOT BE RECEPTIVE

Establishing trust and empathy is critical when addressing concerns related to BIA-SSD. Surgeons should prioritize building a genuine rapport by spending time truly listening to their patients, understanding their symptoms, and demonstrating empathy. Often, when patients feel understood and validated, their symptoms may diminish, partly due to the reassurance provided by the healthcare provider.

A helpful approach to engaging patients with findings consistent with BIA-SSD involves discussing existing research on the condition. Studies suggest that patients with heightened baseline anxiety or preexisting worries are much more likely to report symptoms. Share this information with patients. To avoid alienating or upsetting patients, it is advisable to refrain from directly labeling the condition as a mental health disorder or using terminology such as SSD. Instead, the focus should be on symptom management strategies that do not necessarily involve breast implant removal.

Counseling can be presented as a potential means of reducing symptoms, as it may address underlying anxiety and concerns. Physicians should explain that although breast implant removal may offer short-term relief by reducing worries, it might not address the root cause of symptoms if the implants are not the primary issue. Additionally, removing implants could result in unhappiness or aesthetic deformity. Thus, exploring nonsurgical options, such as guidance and counseling, should be emphasized before considering explantation.

Communicating effectively and compassionately with patients about BIA-SSD is essential for minimizing distress and achieving the best outcomes. By focusing on understanding patient concerns, providing reassurance, and discussing evidence-based symptom management strategies, surgeons can foster a supportive environment for patients navigating these challenges.

NONSURGICAL TREATMENT OF BIA-SSD

If the evaluating plastic surgeon believes that there may be a component of severe anxiety or SSD causing patient symptoms, explaining the medical issue and referring to a mental health specialist who is trained in the treatment of SSDs is appropriate. It will be helpful that the plastic surgeon provides a referral to a local mental health professional with this expertise who can assist the patient.

Using the approach described in the prior section, plastic surgeons can help direct the early conversation toward gaining patient trust and an understanding of the issues. Patients should understand what recent studies have shown regarding anxiety and depression and their link to BII symptoms. A conservative approach is most effective for patients who are interested in keeping their breast implants and are open to trying a nonsurgical approach. We suggest that counseling be focused on the evidence that anxiety is known to produce symptoms in many people, without a known disease process, and that several forms of treatment may be useful to reduce symptoms without surgery. Patients who are otherwise satisfied with their breast implants and stressed about the physical outcome of implant removal may be the most amenable to these conversations.

There are several nonsurgical modalities that can be therapeutic interventions for BIA-SSD. CBT has been found to be effective for SSD.^{12,28,29} CBT is a form of psychotherapy that focuses on modifying dysfunctional emotions, behaviors, and thoughts by challenging negative or irrational beliefs. The technique involves efforts to change thinking patterns and behavioral patterns. Psychotropic medication may also be a helpful adjunct to manage the anxiety associated with this disorder, but is not considered the primary means to improve symptoms and outcomes.¹² If a patient is amenable to CBT or other forms of psychotherapy, a period of at least 3–6 months of regularly scheduled therapy is typically required for noticeable improvement.³⁰ Patients who are resistant to being evaluated by a mental health professional, are not successful in therapy, or desire to have their implants removed may consider surgical options.

SURGICAL TREATMENT OF BIA-SSD

Recent research demonstrates that patient symptoms attributed to breast implants may improve with explantation alone or with various forms of capsulectomy.^{1,2} From a psychological perspective, it is not surprising that explantation would result in improvements in BII symptoms linked to anxiety, as recent studies have shown that anxiety levels may be reduced with explantation.² Explantation is likely to both reduce negative expectations about future symptoms and generate positive expectations about recovery. Women who believe their implants are causing them harm may understandably experience high levels of anxiety, which would be expected to diminish substantially following explantation. Expectations and anxiety are both central to maintaining somatic symptoms,¹⁸ and improved expectations and reduced anxiety following surgery could explain symptom improvement following explantation.

The degree of symptom improvement does not significantly vary based on the extent of the capsulectomy performed, suggesting that removal of the implant capsule for BII symptoms alone may not be necessary for some patients considering explantation for BII symptoms. Capsulectomy may be appropriate for cases in which other factors are considered in surgical planning, including implant rupture, capsular contracture, management of textured prostheses, breast implant associated-anaplastic

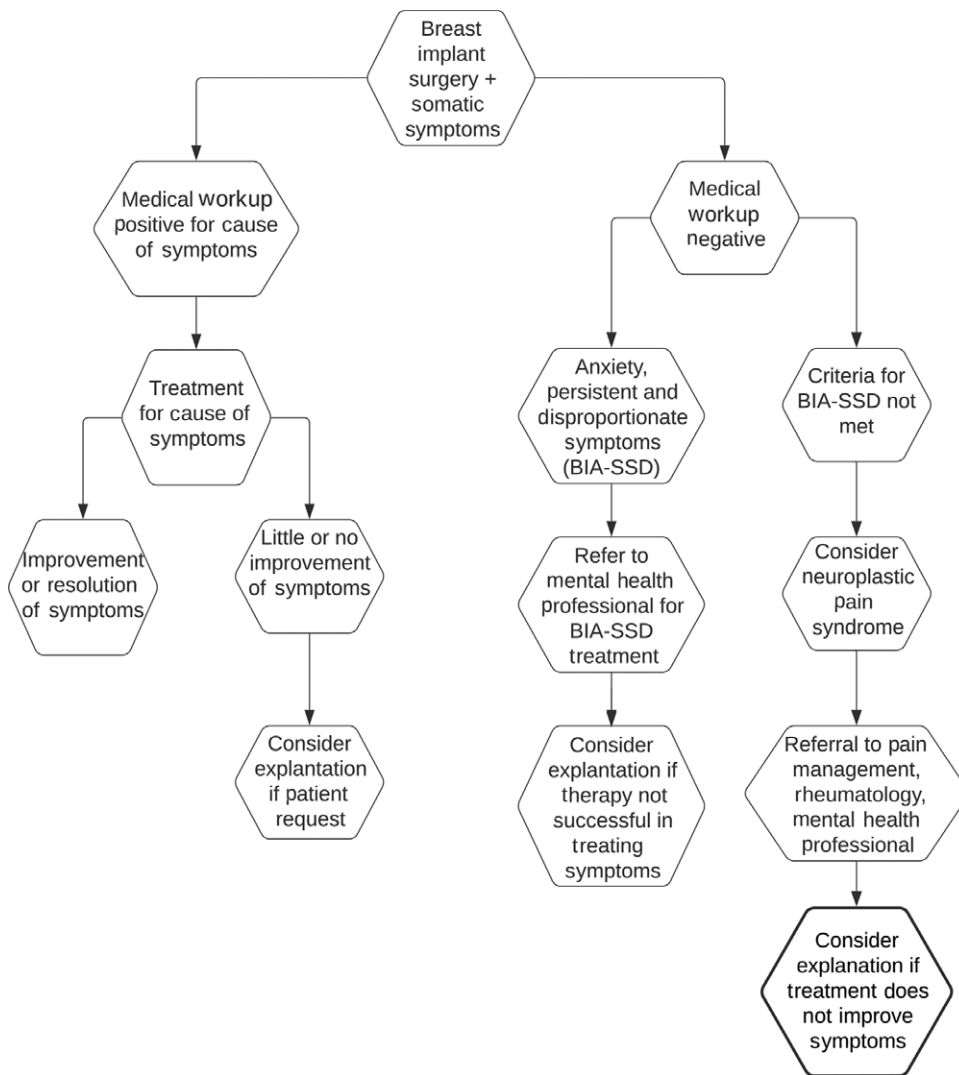


Fig. 2. Flowchart for the treatment of patients with a history of breast implant surgery and somatic symptoms they feel are related to their implants.

large cell lymphoma, breast implant associated-squamous cell carcinoma, or other medical conditions. “En bloc” procedures are not necessary and have not proven to be superior in BII symptom management compared with more limited forms of capsulectomy or implant removal alone.³¹ Because the cause of symptoms in BIA-SSD seems to be a somatic symptom illness, the least invasive procedure that accomplishes the patient’s desire for explantation should be considered.

Figure 2 shows a treatment flowchart algorithm for patients who present with a history of breast implants and somatic symptoms that they attribute to their breast implants.

CONCLUSIONS

The work presented here provides a means to identify patients with BIA-SSD and other causes of somatic symptoms associated with breast implants and provides both nonsurgical and surgical treatment options.

Patients diagnosed with BIA-SSD should be referred to a qualified mental health professional trained in SSD therapy if they wish to keep their implants. Patients with other potential causes of somatic symptoms should have a workup to rule out medical causes of symptoms. If patients are intent on removing their breast implants for BII symptoms, or if it is felt to be the most appropriate next step, patients should be offered explantation with the most conservative surgical techniques possible.

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DISCLOSURES

Dr. McGuire is a clinical investigator, Motiva US Food and Drug Administration Clinical Trials. The other authors have no financial interest to declare in relation to the content of this article.

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