Medical Minute
Breast Implant Rupture

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Implant-based reconstruction is the most common type of breast reconstruction in the United States. According to the American Society of Plastic Surgeons, 137,808 breast reconstruction procedures were performed in the United States in 2020. Seventy-five percent of these reconstructions were implant-based procedures, and the majority (93%) involved silicone implants.

Both silicone and saline implants are composed of an outer silicone shell. This shell can tear or develop a hole or "rupture." The most frequently reported cause of implant rupture is due to damage from a surgical instrument. Other causes include aging of the implant, trauma to the breast area, or needle puncture from a biopsy. An accurate understanding of the causes implant rupture is limited by the lack of standardized screening and reporting protocols.

The chances of implant rupture increase over time; rates are initially quite low and begin to increase in the decade following placement. Furthermore, the risk of implant rupture may vary depending on the manufacturer and the specific implant make or model. Some implant manufactures report a 10-year implant rupture rate as high as 35% in patients with breast reconstruction. The impact of improvements in shell design and silicone gel cohesiveness on rupture rates are currently unknown.

If a saline implant ruptures, it is obvious because the saline drains out and is absorbed by the body, leaving the implant deflated. However, silicone implants can rupture but cause no signs or symptoms because the silicone gel tends to stay in the capsule of scar tissue around the implant. This is referred to as a "silent rupture." The FDA recommends that people with silicone breast implants receive MRI screening for silent rupture three years after the initial implant surgery and every two years after that. In some instances, a ruptured implant does cause symptoms, including pain or discomfort, a change in the size or shape of the breast, swelling, or a lump or hardening of the breast.

If someone suspects they have a ruptured implant, the first step is to have a physical exam by a plastic surgeon. Imaging with ultrasound or MRI is typically performed to confirm the rupture. While ultrasound is the most cost-effective imaging method to assess a potential rupture, MRI has a higher sensitivity and specificity (90%) and is therefore often the preferred technique.

If a patient has a confirmed rupture of a silicone implant, they should be offered the options of observation or surgical removal. If they proceed with surgical removal, they can have the implant, the surrounding capsule, and any silicone that might have leaked beyond the capsule, removed. The patient can decide whether to have the implants replaced at the time of removal, to go flat, or to use their own body tissue for a flap reconstruction. When a saline implant ruptures, it is typically removed because the implant becomes deflated. The same choices regarding implant replacement, going flat, or flap reconstruction apply in this situation. Studies to date have found no evidence of negative health implications associated with implant rupture.

References:

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