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Unusual Cause of Unilateral Breast Swelling

Jon Kristinn Nielsen¹, Rares Miscov¹, Peter Fryd Birkeland²

Key words

- Breast implant
- Shunt migration
- Ventriculoperitoneal shunt

Abbreviations and Acronyms

CSF: Cerebrospinal fluid

DC: Distal catheter

VPS: Ventriculoperitoneal shunt

From the Departments of Neurosurgery, ¹Aalborg University Hospital, Aalborg; and ²Rigshospitalet, Copenhagen, Denmark

To whom correspondence should be addressed:

Jon Kristinn Nielsen, M.D.

[E-mail: jon.n@rn.dk]

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A 69-year-old woman presented with a 4-day history of swelling of the right breast. Her medical history included bilateral silicone breast implants, both of which were replaced 13 years ago due to implant rupture. Three months before admission she had a ventriculoperitoneal shunt (VPS) inserted because of normal pressure hydrocephalus. Tunneling of the distal catheter (DC) followed preoperative skin markings 5 cm medial to the implant so as to avoid puncture.

On examination, there were no signs of infection. Blood tests were normal. Ultrasound and a mammogram showed fluid and radiopaque tubing surrounding the breast implant. CT scan confirmed that the DC had migrated upwards and coiled into the intracapsular space of the breast implant (Figure 1). There was no evidence of implant rupture.

A 69-year-old woman with bilateral breast implants and a newly inserted ventriculoperitoneal shunt presented with a 4-day history of swelling of the right breast. There were no signs of infection and blood tests were normal. With the help of ultrasound, mammogram, and computed tomography, the distal catheter of the shunt was found to be surrounding the right breast implant. During surgery the catheter was tunneled away from the breast and reinserted into the peritoneal cavity. She was discharged the next day. Ventriculoperitoneal shunt migration to the breast is a rare complication that can lead to cerebrospinal fluid accumulation and may be avoided by carefully tunneling away from the implant.

During surgery, the DC was gently pulled up through a clavicular incision, through which considerable amounts of clear cerebrospinal fluid (CSF) were released by gently pressing on the breast. The DC was carefully tunneled close to the sternum and placed inside the abdomen. The patient was discharged the next day. CSF cultures were negative.

VPS migration to the breast is a rare mechanical complication, which can lead to CSF accumulation. It presents as an enlargement of the affected breast and can be accompanied by tenderness and erythema. Malfunction of the shunt may also occur. Infection and perforation of the implant should be ruled out. In general, the elastic memory of the shunt material and simultaneous CSF pulsations combined with flexion and extension of the neck may lead to DC traction and migration into any subcutaneous pocket. Increased intraabdominal pressure acts as a contributing factor.^{1,2} Most migrations occur within 6 months of VPS placement.^{2,3} In this case, it is likely that the DC inadvertently was passed through the fibrous capsule of the breast implant during the initial surgery and that this acted as a trigger.

Migration of the DC to the intracapsular space of a breast implant may be avoided

by keeping a safe distance to the fibrous capsule. The role of a purse-string suture to secure the DC has been debated.¹

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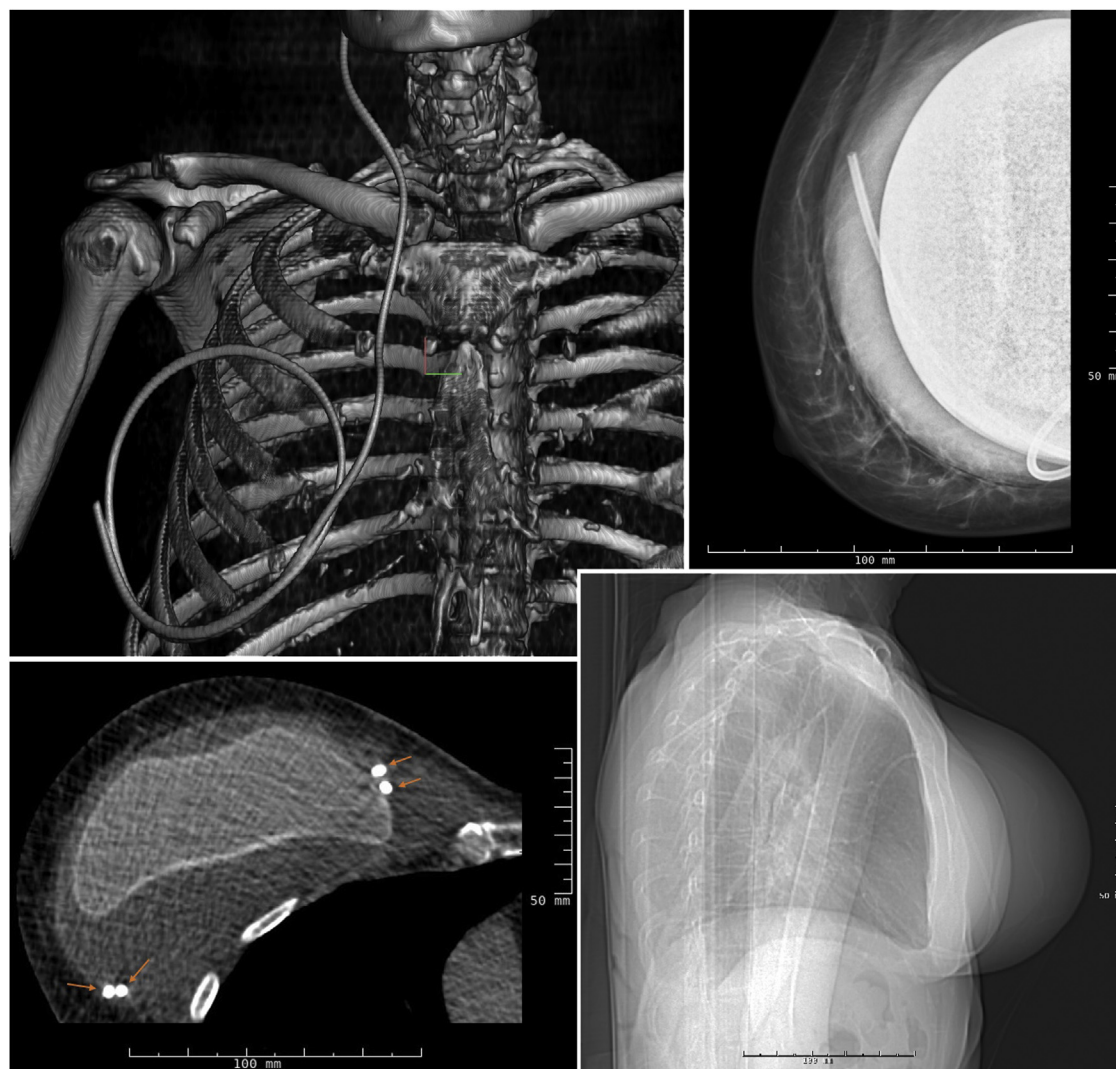


Figure 1. A 69-year-old woman with bilateral breast implants and a newly inserted ventriculoperitoneal shunt due to normal pressure hydrocephalus presented with a 4-day history of swelling of the right breast. Ultrasound and a mammogram (*top right*) showed fluid surrounding the breast implant along with radiopaque tubing. A huge discrepancy between her breasts was observed on the computed tomography (CT) scout image (*bottom right*). The CT scan (*bottom left*) showed that the distal catheter (DC) (*orange arrows*) had migrated

upwards and surrounded the implant, which was also appreciated on the 3-dimensional reconstruction (*top left*). There was no evidence of implant rupture. The patient underwent surgery where the DC was pulled up through a clavicular incision. Cerebrospinal fluid was released through the incision with gentle pressure on the breast. The DC was carefully tunneled close to the sternum and placed inside the abdomen. The patient was discharged the next day.