

## CASE REPORT

# Uterine Artery Embolization Complicated by Nontarget Labial Embolization: A Case Report

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**N**ontarget embolization of the labia minora during uterine artery embolization (UAE) may be managed with supportive care in the outpatient setting, although permanent alterations in sensation may occur.

Uterine artery embolization is an increasingly popular alternative to myomectomy and hysterectomy. Initial studies have shown it to have a lower complication rate than either of these two surgeries.<sup>1</sup> However, nontarget embolization has been reported following UAE, resulting in ovarian failure,<sup>2</sup> unilateral deep buttock pain,<sup>3</sup> buttock necrosis,<sup>4</sup> and uterine necrosis.<sup>5</sup> There is also one prior report of nontarget embolization causing labial necrosis.<sup>6</sup> The authors report a similar case of labial necrosis following UAE, resulting in persistent labial pain.

### CASE REPORT

A 45-year-old woman with several years' history of menorrhagia and severe right-sided pelvic pain was diagnosed with uterine fibroids. Both clinical examination and pelvic magnetic reso-

nance imaging (MRI) demonstrated a 12-weeks'-gestation-sized uterus, with a 5.4-cm subserosal and a 4.6-cm anterior fibroid. Findings from endometrial biopsy were benign. The patient elected to undergo UAE rather than medical management, myomectomy, or hysterectomy.

The patient was given 1 g of cefazolin prior to UAE. The procedure was performed using a 4-Fr sheath in the right femoral artery. Coaxial catheterization with a 3-Fr catheter was used to deliver 5 mL of 500- to 700- $\mu$ m acrylic copolymer beads, followed by 5 mL of 700- to 900- $\mu$ m beads administered selectively under fluoroscopic guidance into both uterine arteries until stasis of flow occurred. There was no reflux of embolic material from either uterine artery, and no anatomic or abnormal communication of either uterine artery.

The patient complained of severe left labial pain immediately postprocedure, for which she was admitted to the hospital for overnight observation and analgesia. She reported continued severe left labial pain on the following morning, along with swelling.

FIGURE.



Area of necrosis due to nontarget embolization of the labia minora.

Courtesy of Jay Goldberg, MD, MSCP and Maria Mella, BS.

Physical findings were unremarkable. The patient was discharged with prescriptions for doxycycline 100 mg orally twice daily for 1 week; ibuprofen 400 mg orally every 6 hours as needed; and hydrocodone plus acetaminophen 5/500 mg orally every 4 hours as needed.

On the day after discharge, the patient noticed a hard, black area surrounded by redness on her left labia minora. The entire labium was edematous and tender. Her gynecologist confirmed her observation (Figure), and recommended applying ice to the area. The patient returned to the

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gynecologist on postprocedure day 4, at which time the blackened area covered 50% of the left labia minora. The area appeared to be necrotic, with a central area of pus. The gynecologist recommended warm soaks and local hygiene.

On postprocedure day 9, the patient returned to the interventional radiologist for follow-up. She complained of persistent labial pain, and the clinician noted an open sore on the left labia minora, 3 cm x 2 cm, with granulation tissue at the base. There was no evidence of erythema or necrosis at the margins, but the area was extremely tender. The presumptive diagnosis was nontarget embolization of the labium. The patient was given prescriptions for a topical burn cream, more pain medication, and continued daily warm soaks.

At a follow-up visit on postprocedure day 25, healing of the left labial necrotic region was noted with good epithelialization, although it was still quite tender. Following this visit, the patient was able to return to work part-time.

At 2 years after undergoing UAE, the patient reported that the embolized area on the left labia minora retained increased sensitivity to touch despite a normal appearance. She also noted a recurrence of menorrhagia. Pelvic ultrasonography demonstrated that the two primary fibroids remained decreased in size following UAE at 2.6 and 2.4 cm.

## DISCUSSION

The authors believe this patient's signs and symptoms—occurring so soon postprocedure—to be the result of nontarget labial embolization during UAE. The internal pudendal artery and uterine artery are adjacent to each other, branching off the anterior portion of the internal iliac artery. The internal pudendal artery supplies the labia minora, while the uterine artery supplies the uterus. Most likely, injection of embolic material into the nearly static uterine artery resulted in the reflux of particles into the left internal pudendal artery, producing ischemia in the branches supplying the labia.

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**Nontarget labial embolization during UAE may be effectively managed conservatively on an outpatient basis.**

Careful embolization technique and repeated angiography throughout the procedure are essential to minimize the risk of nontarget embolization. If embolization material accidentally occludes vasculature supplying the labia, significant skin and subcutaneous necrosis may occur. To date, there has been one other reported case of nontarget labial embolization as a complication of UAE.<sup>6</sup> That patient was hospitalized and managed conservatively with intravenous (IV) pain medication, topical lidocaine jelly, catheter placement to divert urine from the lesion, and empirical IV antibiotics. All signs and symptoms of labial nontarget embolization had resolved by 4 weeks' postprocedure.

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In the case presented here, labial nontarget embolization was managed on an outpatient basis, with prophylactic oral antibiotics, pain medication, and hygienic care. There was no debridement or surgical treatment. Similar to the previously reported case, the lesion had almost completely healed visually by 1 month postprocedure. By contrast, however, this patient continued to have increased sensitivity in the embolized labial area.

## CONCLUSION

Nontarget labial embolization during UAE may be effectively managed conservatively on an outpatient basis. Despite complete resolution of all visible evidence of nontarget embolization, permanent changes in labial sensitivity may ensue.

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