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(CASE REPORT)

A Case of Distant Migration of the Nexplanon Contraceptive Implant

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Abstract

A 29-year-old woman presented with concerns about her Nexplanon implant, which had been inserted into her left arm over two years ago. The implant, initially palpable, was no longer felt, and the patient suspected migration after a grabbing incident seven months post-insertion. Despite negative results from a urine pregnancy test, ultrasound, and X-rays, a CT scan revealed a 3.6 cm radiopaque foreign body in the right lower lobe's pulmonary vessel, confirming the implant had migrated intravascularly. This rare case underscores the potential for Nexplanon migration to distant locations, such as pulmonary vessels, and highlights the importance of radiographic imaging, particularly CT scans, in diagnosing such complications. Prompt identification and removal are essential to prevent further issues.

Keywords: Contraception; Nexplanon; Implant; Implant Migration

1. Introduction

This case report highlights a perplexing occurrence of a contraceptive Nexplanon implant migrating into a subsegmental pulmonary vessel within the right lower lobe. In this case, a 29-year-old female expressed concerns about its potential dislodgment. Computed Tomography (CT) scan led to the unexpected diagnosis of the implant migration to the pulmonary vessel. Contraceptive implants have side effects, including infections and irregular menstruation. However, the migration of implants is an infrequent possibility. The radiopacity of implants like Nexplanon enables the implant location if migration occurs. Nexplanon is a long-term progestogen-based contraceptive implant containing 68 mg of Etonogestrel. It has been accessible since 2010. The barium sulfate covering renders it radiopacity, allowing it to be detected using CT and X-ray. Subdermal contraceptive implant side effects are uncommon and occur locally, such as implantation site infection, hematoma, aberrant scarring, or blood vessel damage. Migrations are seldom possible and usually happen close to the implantation site from Ismail et al [1]. Intravascular migration of this contraceptive device is a prominent, albeit uncommon, consequence of device placement. There are reports of eight Intravenous migrations in the United Kingdom, France, and Ireland. (Rowlands et al., 2017) [2].The anticipated likelihood of intravascular insertions is 1.3 for every million Nexplanon implants supplied globally (Nexplanon update report, 2016) [3].

2. Case Presentation

A 29-year-old female sought medical assistance as she could not feel the contraceptive Nexplanon implant, which had been inserted in her left arm more than two years ago. Notably, the implant was palpable immediately after insertion. The patient reported concerns about the potential dislodgment of the implant following an incident seven months post-implant insertion after a grabbing incident when she was outside with her friends. The urine pregnancy test was negative. The implant was not palpable upon examination in primary care, nor did it appear in the ultrasound of the arm and axilla. A single X-ray of the humerus was requested to locate the implant, considering the radiopacity of some

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implants. The X-ray result was also negative and did not reveal the presence of the implant. Upon discussion with the gynaecologist and sexual health consultant, further X-rays were arranged. The chest, axilla and forearm X-rays presented no abnormalities (Figure 1). After multiple discussions with patient regarding her missing implant, we decided to book a Magnetic resonance imaging (MRI) scan of her left arm to locate it. Ergo, the consented radiologist changed the MRI with the CT scan, which revealed a radio-opaque linear foreign body measuring 3.6 cm in length within a subsegmental pulmonary vessel in the right lower lobe (Figure 2). Its appearance aligned with that of the dislocated contraceptive Nexplanon. Otherwise, her lungs were clear. The CT investigation diagnosed that the implant had migrated to an unexpected location and not displaced or expunged by grabbing incident as it was initially perceived owed to the grabbing incident. The immediate advice for the patient was to visit the emergency surgical department for implant removal. She was referred to Cardiothoracic team from there.

Figure 1 Chest X Ray which was reported as normal

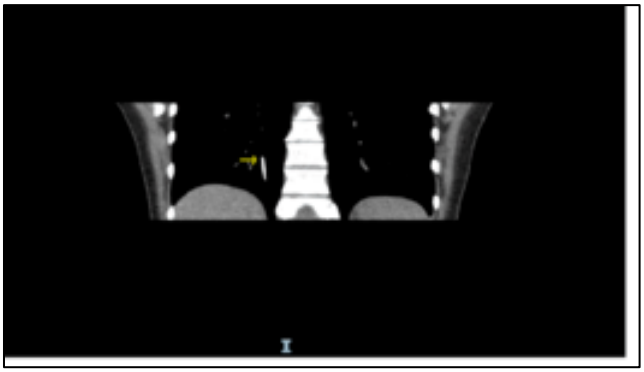

Figure 2 CT Chest Coronal View showing implanon in the subsegmental right lower lobe pulmonary vessel

3. Discussion

The implant had been inserted approximately 2.5 years before its discovery in the pulmonary vessel. However, the device was initially palpable after insertion, but the patient could not feel it. A grabbing incident, which took place seven months post-implant placement misled the scenario. In the present case, the patient description led to the confusion of migration with displacement. Nexplanon implant migration to the lungs and pulmonary track is an emerging complication of contraceptive implants. A Food and Drug Administration report found 38 individuals with an Etonogestrel implant migration, with nine occurrences occurring in the lung or pulmonary artery until 2015 (Kang et al., 2017) [4]. The presented case adds to this infrequent occurrence. An arm ultrasound and X-ray were performed as usual workups to serve the locating purpose. These tests failed to locate the implant in the case presented, indicating migration to a distant site. A chest X-ray and a CT were requested to demonstrate the exact secondary location of the device. The CT results revealed the device in the pulmonary vessel of the patient. The hormonal assay can also indicate or deny the device presence in the patient's body (Hindy et al., 2020) [5]. Nexplanon inhibits ovulation by releasing Etonogestrel, whose level varies from 196-156 pg/mL during 1st to 3rd year, respectively. The ovulation gets restricted at 90 pg/mL of Etonogestrel. Henceforth, Etonogestrel level measurement can be a helpful indicator of implant

presence. The previous generation implant, Implanon, has been known to migrate. Nexplanon includes an improved radiopaque inserter to aid in finding migrating implants and reduce the danger of deep insertion. Following a Nexplanon implant migration in the pulmonary track, significant cardiac problems, including infection, additional migration, and thrombus, may form.

4. Conclusions

The previous generation implant, Implanon, has been known to migrate. Nexplanon includes an improved radiopaque inserter to aid in finding migrating implants and reduce the danger of deep insertion. Following a Nexplanon implant migration in the pulmonary track, significant cardiac problems, including infection, additional migration, and thrombus, may form. The previously reported cases of distant implant migration were identified by chest pain. However, the present patient reported no such symptoms. The radiopacity has also resulted in identification through X-rays or CTs instead of MRIs. Endovascular operations are the most effective procedure to extract implants from intravascular pathways, ensuring a higher success and a lower morbidity rate. This particular case was referred to cardiovascular surgeons as to what procedure should be adopted with minimal complications, keeping in mind the patient's long-term health and her desire to conceive.

Compliance with ethical standards

Disclosure of conflict of interest

No conflict of interest to be disclosed.

Statement of informed consent

Informed consent was obtained from all individual participants included in the study.

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