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# Complications associated with intimate body piercings

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## Abstract

Intimate body piercings involving the nipple and genitalia have increased in prevalence in both men and women. Despite this increase, there is a deficiency in the literature regarding the short and long-term complications of body piercings, including an increased risk of infection, malignancy, and structural damage to the associated tissue. Breast abscesses associated with nipple piercing can be mistaken as inflammatory carcinoma. Male genital piercings have been associated with urethral rupture, paraphimosis, urethral obstruction, scar formation, and squamous cell carcinoma, whereas female genital piercings may lead to a higher risk of pregnancy and sexually transmitted infections. There are additional problems related to piercings during pregnancy and thereafter. Nipple piercings can hinder breast feeding by inhibiting the milk letdown reflex, increasing nipple sensitivity, and causing discomfort to the infant. Removal of genital piercings during pregnancy could introduce bacteria into the piercing tract, but retaining the piercings could theoretically hinder childbirth. Prevention of complications is critical. Patients must understand the risks of piercings and disclose relevant medical conditions to the practitioner before the procedure. The piercings should be carried out in a hygienic and sterile manner. Finally, physicians should maintain a non-judgmental attitude to encourage patients to seek medical care for complications.

*Keywords: body piercing, nipples, genitalia*

## Introduction

Decorative body piercings have been used by humans since ancient times. Ear piercings have been found in carvings and depictions for the past 2000

years in places such as Cambodia, India, and **southeast Asia [1]. The Vedas, India's ancient religious texts dating back to 1500 Before Common Era (BCE), describe the goddess Lakshmi wearing earlobe and nose piercings [2]. The Romans practiced infibulation by passing a ring through the prepuce of males, an early form of genital piercing, although the purpose was to inhibit sexual excitement [1, 2]. Celsus, a first-century writer, wrote about a medical procedure that is similar to male genital piercing [2]. The Olmecs, Mayans, and Aztecs practiced ritual piercings, especially for the tongue and penis [2]. One of the oldest descriptions of glans piercing to enhance sexual enjoyment for a man and his partner is found in the *Kama Sutra*, an ancient Sanskrit text about sex written around the first century Common Era (CE), [2]. In Western culture, piercing has traditionally not been as prevalent owing to religious beliefs [2]. Nevertheless, during various explorations from the early fifteenth to seventeenth centuries, sailors would wear earrings; **later, during the 1890s, there was allegedly a "breast-piercing craze" in London [2]. Body piercing became an act of rebellion in the 1970s and 1980s during the punk movement and later became a fashion accessory, particularly nipple and genital piercing in gay men. In addition, this was common in participants in bondage and discipline, dominance and submission, and sadism and masochism (BDSM), [1, 2].****

Now, intimate piercings, which involve the nipple and genitalia, have become common body adornments in both men and women [3, 4]. Intimate sites include single or multiple piercings of the nipples, clitoral hood, inner and/or outer labia, perineum, penis, foreskin, and scrotum [3, 4].

Although there is an increase in the prevalence and social acceptance of intimate body piercings, there is a dearth of literature on the associated health risks and complications related to its practice [3]. All piercings share a number of complications such as infection, trauma, hypersensitivity reactions, bleeding, keloid formation, and scarring [5, 6]. When infections occur, *Staphylococcus aureus*, Group A *Streptococci*, and *Pseudomonas* species are the most commonly cultured organisms [7].

The purpose of this commentary is to describe the most common complications associated with nipple and genital piercings that health care providers should recognize in their patients and some treatment options.

## Body of Article

### Nipple Piercings

Nipple piercings are associated with both infectious and noninfectious complications. Some of these noninfectious difficulties include migration, rejection, and tearing during contact sports (Figure 1), [7, 8]. Additionally, stimulation of the nipple can lead to galactorrhea and subsequently hyperprolactinemia [7]. Removal of the jewelry should normalize the prolactin levels [9].

The infection rate associated with nipple piercings is estimated to be 10-20% but actual numbers may be higher [10, 11]. The high incidence rate is partly related to the prolonged healing time of breast

tissue, which may last up to six to twelve months. This interval can be increased up to an additional twelve months if infection, trauma, or other complications occur [7, 10].

Nipple piercing-related infection can present as a local piercing site infection, cellulitis, abscess, and even endocarditis in high-risk patients [10, 11]. Incidence of infection after piercing is bimodal and most commonly develops either within the first four weeks or three to twelve months later [11]. There is a risk of the infection spreading around breast and chest wall implants in men and women, so it is recommended that anyone with anterior chest implants avoid nipple piercing [12, 13].

Nipple abscesses present with fever, induration, edema, and erythema at the piercing site [11, 14]. Upon examination via ultrasound, abscesses may be difficult to identify in patients with dense breast tissue [11]. In the absence of erythema, an abscess may clinically resemble a tender fibroadenoma [11]. Treatment of breast abscesses includes incision and drainage, aspiration, antibiotics driven by culture with sensitivities [10, 11]. Reported organisms include *Staphylococcus* species, *Streptococcus* species, *Mycobacterium* species, and *Prevotella intermedia* [7, 10, 11]. Consider tissue biopsy if cultures fail to produce an organism and mycobacterial infection is suspected (Box 1), [11].

Additionally, the literature reports two cases of a breast abscess that developed at the site of nipple piercing, which was initially misdiagnosed as breast cancer [10]. Also, breast abscesses could mimic the



Figure 1. Nipple piercing. Reproduced with permission from Robin Roche-Paull, and SAGE Publishing, "Body Modifications and Breastfeeding: What You Need to Know"; published by Journal of Human Lactation, 2015 [8].

#### Box 1. Key points associated with nipple piercings.

Abscess may resemble a tender fibroadenoma or inflammatory carcinoma<sup>a</sup> [11].

Organisms include *Staphylococcus*, *Streptococcus*, *Pseudomonas*, *Mycobacterium*, and *Prevotella* [7, 10, 11]

Treat through incision and drainage, aspiration, antibiotics, and bacterial culture with sensitivities [10, 11]

<sup>a</sup> The clinical appearance of inflammatory carcinoma is very similar to that of a breast abscess, so a high index of suspicion is important in cases of sterile breast cultures. The literature reports two cases of a breast abscess that developed at the site of nipple piercing which was initially misdiagnosed as breast cancer.

appearance of inflammatory carcinoma [11]. Therefore, a high index of suspicion is important in cases of sterile breast cultures [11].

### Genital Piercings

Genital piercings can also cause a number of infectious and noninfectious complications. Genital piercings serve as a possible nidus for overgrowth of periurethral microflora and are also prone to more serious infections such as cellulitis or abscesses [15, 16]. *Escherichia coli*, a normal gastrointestinal microflora, is often implicated in localized piercing-associated infections [16]. Other non-resident bacteria, such as *Eikenella*, have been reported and may be translocated to the piercing site through activities such as oral sex [17].

When cellulitis or an abscess is suspected, genital jewelry should be left in place to prevent introduction of further bacteria and to provide a drainage channel for the abscess [15]. Warm compresses and topical antibiotics may also be used [15]. If the infection does not subside, the jewelry must be removed followed by incision and debridement of the site and systemic antibiotics (Box 2), [7, 15].

Similar to nipple piercings, genital piercings may take up to one year to fully heal and are at an increased risk for traumatic complications [15]. To protect the area from trauma and infection during the healing period, recipients should refrain from pools, hot tubs, and unprotected sex for two to four

weeks post-piercing [15]. Recipients often choose large gauge jewelry that will not fall out or avulse if caught on clothing or manipulated during sexual intercourse [15]. Interference with barrier contraceptive methods may require individuals to avoid jewelry with sharp edges. To prevent pregnancy, one could use a second form of contraception/protection, apply double condoms [7], or use extra-large condoms to account for the additional bulk of the piercing and inhibit traumatic removal during sexual intercourse [15].

### Sex-Specific Complications

Owing to their unique location and the anatomical differences between male and female anatomy, genital piercings may also cause a number of specific complications; we emphasize the importance of taking a thorough sexual history (Table 1), [18].

#### *Male-specific complications*

The literature reports a number of complications that are unique to male genital piercings. The most common male genital piercing is the Prince Albert (Figure 2), [7, 15, 18]. A Prince Albert piercing goes through the urethral meatus on the ventral side of the penis [3].

Avulsion of Prince Albert piercings may cause urethral rupture, which can be treated conservatively or may require primary closure [6]. In uncircumcised men, paraphimosis has been reported, because of the inability to place the prepuce back over the genital piercing [6, 19]. Treatment options include manual prepuce retraction in the presence of a nerve block, injection of hyaluronidase into the prepuce, or

#### Box 2. Key points associated with genital piercings.

Prone to cellulitis or abscesses; rare cases of squamous cell carcinoma have been reported [15, 16, 25]

Organisms include *Staphylococcus*, *Streptococcus*, and *Pseudomonas* [7]

Treat localized infection with irrigation, compresses, topical, and oral antibiotics (if necessary) [7, 15]

Jewelry may be left in place if the open piercing tract allows drainage and subsequent abscess formation; however, removal of jewelry may become necessary if infection persists [7, 15]

If jewelry is removed, follow with incision and debridement of the site and intravenous antibiotics [7, 15]



Figure 2. Prince Albert piercing. Reproduced with permission from Dr. Anne Laumann, and Springer Nature, "Body Piercing Complications and Prevention of Health Risks"; published by American Journal of Clinical Dermatology, 2012 [7].

Table 1. Sex-specific complications of intimate piercings.

| Male-specific   | Female-specific   |
|---|---|
| Urethral rupture [6]  | Increased risk of pregnancy and sexually transmitted infection by damaging condoms or dislodging diaphragms during sexual intercourse [6]                           |
| Paraphimosis in uncircumcised men [6, 19]                                     |   |
| Urethral obstruction, scar formation, and urinary flow changes [6, 7, 15, 23] |   |
|   | Navel jewelry in pregnant women can lead to migration, rejection, and striae [26, 27, 28]   |
|   | Nipple piercings can affect breast-feeding through inhibited milk letdown reflex, increased nipple sensitivity, scar tissue formation, or infant discomfort [7, 26] |
|   | Genital piercings may be removed during pregnancy but could introduce bacteria into the piercing tract [26]   |

glans puncture or slit [6]. Because of the vascularity of the penis, there is a risk of severe hemorrhage for penile piercings, especially glans piercings [7]. Damage to the spongy body of the penis could potentially lead to hemorrhage or erection difficulties [20]. Priapism has also been reported in men with genital piercings, requiring emergency treatment [21-23]. Complications from trauma include damage to nerves and vessels, infertility related to infection, and scar formation that leads to urethral obstruction [6, 7, 15]. Genital piercing can lead to a fragmented urinary stream [23]. Infection with human papillomavirus (HPV) has also been reported in the area of male genital piercings [24].

Finally, squamous cell carcinoma in association with genital piercings have been reported in two cases (Table 2), [15, 25]. The first case involved a 60-year-old man with HIV (on highly active antiretroviral therapy [HAART]) and hepatitis C who had received a Prince Albert piercing four years prior to presenting [25]. Approximately nine months before presentation, the patient noticed urine leakage

around the piercing and pain with intercourse, so he removed the piercing [25]. Eventually, the patient was revealed to have poorly differentiated squamous cell carcinoma [25]. The second case involved a 56-year-old man with HIV, hepatitis C, and a history of a Prince Albert piercing removed 15 years before, who presented with multiple urethra fistulae after an instance of gross hematuria and reported splitting of his urinary stream [25]. Biopsy showed invasive, poorly-differentiated squamous cell carcinoma [25].

The authors of the case report hypothesize that inflammation from the piercing may play a role in the development of the squamous cell carcinoma [25]. Additionally, it is important to note that both patients had a history of HIV and hepatitis C [25]. Although the relationship of these diseases with squamous cell carcinoma and penile piercings is unknown, it is possible that this association may be relevant, especially since these diseases have a distinct role or cause increased frequencies of other types of cancer [25]. Furthermore, weakness in the

Table 2. Summary of case reports of squamous cell carcinoma and genital piercings [24].

|        | Type of genital piercing | Patient Summary   | Treatment and Result  |
|--------|--------------------------|---|---|
| Case 1 | Prince Albert            | 60 year old male with history of HIV and hepatitis C. Noticed urine leakage around piercing site and pain with intercourse.       | Partial penectomy and bilateral superficial lymphadenectomy. Eventually demonstrated poorly differentiated squamous cell carcinoma. |
| Case 2 | Prince Albert            | 56-year-old male with a history of HIV and hepatitis C presenting after gross hematuria. History of piercing 15 years previously. | Partial penectomy and bilateral superficial lymph node dissection. Found to have poorly differentiated squamous cell carcinoma.     |





Figure 3. *Clitoral hood piercing. Reproduced with permission from Dr. Myrna Armstrong, and Elsevier B.V., "Genital piercings: diagnostic and therapeutic implications for urologists," published by Urology, 2011 [15]. Illustration by Larry Starr, Senior Design Specialist: Texas Tech University Health Sciences Center.*

Figure 4. *Navel piercing. Reproduced with permission from Dr. Anne Laumann, and Springer Nature, "Body Piercing Complications and Prevention of Health Risks"; published by American Journal of Clinical Dermatology, 2012 [7].*

immune system could result in failure to clear HPV, which is associated with squamous cell carcinoma [25].

#### *Female-specific complications*

The most common site for female genital piercing is the area surrounding the clitoris (Figure 3), [15]. Clitoral piercings may damage condoms or dislodge diaphragms during sexual intercourse, increasing the risk of pregnancy and sexually transmitted infections [6]. Additionally, clitoral numbness can result from genital piercings [24].

Pregnancy in the presence of body piercings is typically uneventful, but certain potential complications deserve mention [26]. The sites of most concern in pregnant women are the navel, nipples, and genitalia [26]. Complications associated with navel jewelry during pregnancy include migration, rejection, and development of striae (Figure 4), [7, 26-28]. Although the underlying cause of the development of striae is not well understood, some hypothesize that the striae result from stress rupture of the connective tissue framework [28]. Navel piercings cross all layers of the skin, including the connective tissue. When this is combined with the gravid distension of a pregnancy, this may lead to a stress rupture and the formation of a stretch mark [28]. Psychological implications stemming from undesirable cosmesis are possible and some even speculate that navel piercings may impede the growth of the underlying uterus during pregnancy [26].

Complications related to nipple piercings largely involve breastfeeding [26]. Reported difficulties for the mother include inhibited milk letdown reflex and increased nipple sensitivity [7, 26]. It is generally accepted that piercings are not detrimental to milk supply, but there have been reports of reduced milk production in the context of piercings, possibly related to a decrease in mammary blood flow [7, 26]. Alternatively, scar tissue formation can compress the milk ducts and increase resistance to flow despite normal milk production [26].

Some studies suggest that the presence of nipple jewelry can cause discomfort to the nursing infant [26]. Observed difficulties include poor latch, slurping, and gagging; the infant may need to frequently reposition the mouth on the breast [7]. There is a risk of infants aspirating or ingesting nipple jewelry or injuring their gums, tongue, and soft palate [7]. Thus, it is recommended to remove nipple jewelry during breastfeeding [7, 26].

Genital piercing-related complications during pregnancy or labor have not been reported [26]. Repeated removal and reinsertion of genital jewelry during pregnancy could potentially cause infection by introducing bacteria into the piercing tract [26]. However, it is recommended that all piercings be removed during childbirth [7]. There are some concerns that women with genital piercings may experience swelling, which can lead to labial tearing or trauma to the infant during birth [7]. There is a possibility of infertility related to pelvic inflammatory disease after genital piercing [20]. It is recommended that women who are pregnant or anticipate

becoming pregnant within a year should not receive a piercing, since this could expose the fetus to infection, blood-borne disease, and medications to treat complications [7]. Although no specific obstetric complications related to a genital piercing have been reported, in theory, childbirth could be impeded depending on the type of piercing [26]. Genital piercings may also remain in place during cesarean section deliveries, but special care should be taken with catheter placement and sterilization in preparation for the operation to avoid urethral damage or infection [26].

#### Complication avoidance

The incidence of complications related to body piercings may be as high as 70% [29]. In light of the preventable nature of most of these difficulties, numerous recommendations have been reported to encourage complication avoidance.

Prevention is key in deterring piercing-related problems and should start with the patient [7, 30]. There are many contraindications to receiving body piercings. Patients who are taking anticoagulants or antiplatelet medications (such as aspirin and nonsteroidal anti-inflammatory drugs such as ibuprofen and naproxen) or have a predisposition to bleeding should avoid body piercings [7]. These individuals should not take aspirin for 7 days and all other NSAIDs for at least 1 day before undergoing a piercing [31]. Before receiving a piercing, patients should report any known pre-existing medical conditions to the piercer [7]. The body artist should also take a thorough medical history in order to identify those at higher risk of complications [7]. Patients with a history of allergies, diabetes, corticosteroid therapy, anticoagulant therapy, immunocompromising illness, or a history of poor wound healing should be discouraged from receiving piercings owing to a higher rate of complications in these individuals [4, 7, 32]. Individuals wanting body piercings should meet with qualified practitioners to conduct the procedure, as these practitioners will understand the anatomy/physiology of the body part that will be pierced and will follow proper hygienic procedures by using aseptic techniques and sterilized instruments [7]. Proper sterile technique should be

observed in any invasive procedure in order to avoid inoculation of organisms into the piercing site [33].

Education is also crucial in decreasing the frequency of body piercing complications. Piercing education should occur on numerous levels: by the patient, the piercer, and the **patient's physician** [7]. **Before** obtaining a piercing, patients may consult their physician who can offer counseling regarding after-care, signs of complications, choice of a proficient piercer, and relevant contraindications [7]. Proper patient counseling ideally leads patients to choose well-trained piercers who observe proper sterile technique and exhibit knowledge of the piercing site anatomy [7, 29, 34]. The piercer should in turn educate clients on piercing site hygiene, expected healing time, and common complications and their management [7, 29, 35]. Emphasis on diligent aftercare and post-piercing hygiene has proven particularly beneficial in decreasing complication rates [35].

Public health education may benefit populations at higher risk of infectious complications such as prisoners or correctional institution inmates, youths, and military personnel [16]. Schools provide an ideal opportunity to reach adolescents so that truly informed decision-making is possible among those who seek body piercings the most [36]. Other proposed recommendations require piercings to be performed by medical professionals in healthcare settings and increase piercing establishment surveillance [34]. Some also suggest requiring informed consent similar to other invasive medical procedures [6, 7, 29, 33-37].

## Conclusion

Intimate body piercings are increasing in popularity and prevalence. Physicians of almost every discipline should maintain familiarity with potential body piercing complications, as well as the different jewelry types and removal strategies [4, 15, 34]. Knowledge of the techniques used to maintain patient piercing tracts may actually increase patient confidence in his or her physician [15]. Furthermore, physicians should be comfortable with recommendations for preventing and treating

piercing complications. In fact, some argue that there may be psychosocial implications in young individuals with body piercings. These include a call for attention, an appearance of courage, a sense of “belonging” related to the permanence of a piercing, a show of creativity, a way to distance oneself from others who are non-pierced, and a method to express sexuality and identity [38]. Because many of these individuals do not seek psychiatric treatment,

the dermatologist may need to assume this role to understand the behavioral motivations of these patients through evaluation of their piercings in order to help them mentally [38]. Because of the often sensitive nature of piercings, physicians must assume a non-judgmental approach that encourages patients to seek treatment from medical professionals rather than their piercer or the internet [5, 27, 33, 34, 39].

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