Unexpected outcome

Body piercing with fatal consequences

N Ranga,¹ A J Jeffery²¹University Hospitals Leicester, Leicester, UK;²Forensic Pathology Unit, Level 3, Robert Kilpatrick Building, Leicester Royal Infirmary, Leicester, UK**Correspondence to** Dr N Ranga, natasha.ranga@uhl-tr.nhs.uk**Summary**

Body modifications such as piercings, tattoos and surgery have increased in popularity in recent times and have become more socially acceptable. The common complications of piercing different parts of the human anatomy are well-documented, including sepsis, allergic reactions and, more rarely, endocarditis and ischaemia. Deaths related to piercing complications are primarily septic in origin. In this case, a man in his 50s died due to complications of his multiple umbilical piercings. The cause of death was unusually linked to body modification; the umbilical piercings had ultimately led to a mesenteric infarction. Cases such as these are forensically important due to potential manslaughter charges that could be brought against a piercing establishment. More importantly, this case highlights another extreme complication of body modification. Fashion statements are always changing and impact upon many lives. It is important to highlight to people the potentially life-threatening complications of common piercing practices.

BACKGROUND

This is an important case as it highlights a fatal complication of body modification. Body modifications, in particular piercings, have become a common and socially accepted form of personal expression in society. While infective complications are well-documented, few people are aware of the long-term complications as described here.

Body piercing has a long history as a focus of infection.¹

² This ranges from a localised site of infection where the actual modification was made to a more disseminated sepsis leading to endocarditis, tetanus or septic shock, and ultimately death. Rarely do metallic piercings migrate through soft tissue and travel internally causing fatal visceral infarction as described in this case. It is vital for physicians to examine fully and be aware of small, often unnoticed body modifications as the culprits of toxic shock syndrome or even visceral infarction in the febrile sick patient.

Second, with increasing litigation, potential manslaughter charges could be brought against piercing establishments and medical professionals for not advising people of the fatal risks.

While establishments need to make their clients aware of complications and ensure they have provided sufficient training to maintain the modification, medical practitioners must also be aware that an apparently simple umbilical piercing can be responsible for intra-abdominal pathology. More so, it is important to provide medical advice to vulnerable patients. Doctors should advise 'at risk' people—for example, cardiac and immunocompromised patients—of the risks before patients modify any body part that has the potential to cause death.

CASE PRESENTATION**Circumstances of death**

The deceased, a 55-year-old man, lived alone and was thought to be receiving medical treatment for depression.

Friends had not seen the man and police were notified. The police gained access to his home where the deceased was found in bed. The last known medical history of note was he had been complaining of stomach pains over the previous few days and had vomited.

Postmortem examination

A routine postmortem was started by a coronial pathologist and from this concerns were raised that death may have been related to umbilical piercings. The HM Coroner was notified and a police inquiry was instructed. The subsequent examination was undertaken by a Home Office registered forensic pathologist (figures 1–3).

External examination

Multiple piercings were present in the region of the umbilicus in relation to a central vertical scar with no obvious umbilicus. Centrally placed along the vertical scar was a large stud formed of a metal ball with smaller balls on top. The straight shaft passed directly into the underlying wall with the other end absent from view. Immediately below this stud in the midline was a fistula opening of 0.5 cm diameter leaking bowel content (figures 1–3).

Internal examination

The internal examination revealed the cause of death: mesenteric infarction. Internal examination revealed adhesions in the vicinity of the umbilical piercings; one of which had perforated through the full thickness of the abdominal wall but had been walled-off from the abdominal cavity by omental adhesions. The adhesions had caused the small bowel to rotate on its mesentery leading to vascular compromise and subsequent infarction. The extent of the infarction was such that it was highly unlikely he would have survived surgery (figures 1–3).

Figure 1 Photograph of the abdominal cavity showing the infarcted bowel with the metal piercing in place.

Figure 2 The inaction had resulted from twisting of the small bowel on its mesentery causing vascular compromise.

Summary

These abdominal piercings were considered to be highly unusual and inconsistent with existing piercing practice. The piercings present were related to the intra-abdominal complications. Piercing migration is a common phenomenon. It is possible that with time and continuous pressure in the region of the stud, for example, trouser waist band, the stud could migrate through the abdominal wall. It is possible the adhesions may have occurred due to a combination of the piercing with naturally occurring adhesion process. With this case, there was evidence of additional

umbilical scarring. The deceased did not have any significant medical or surgical history that could account for the adhesions or the migration of the metal piercing. The deceased was suffering from depression and practiced self-piercing.

OUTCOME AND FOLLOW-UP

Police inquiries were undertaken in an attempt to ascertain the timing and origin of the piercings but were unsuccessful. The police investigation drew to a close. The subsequent inquest returned a verdict of accidental death.

Figure 3 Dissection of the adhesions revealed breach of the peritoneum by the metal piercing with the fistula adjacent.

DISCUSSION

Pathology and fashion are two very different disciplines rarely connected, but in this case they meet with fatal consequences. Virtually any external surface of the body is modifiable through tattoos, piercing and surgery. The complications are well-recognised of which many are dependent on the site and are restricted to the local effects. Piercing is a popular and acceptable form of body modification.³ It is difficult to obtain accurate and objective literature with regards to complication rates. While piercing continues to occur in unlicensed premises and self-piercing is commonplace, any attempts to quantify complication rates will inevitably underestimate the problem.

In April 2004, the government amended the Local Government (Miscellaneous Provisions) Act 1982 giving local authorities powers to regulate businesses providing cosmetic piercing (ear piercing or body piercing) and semi-permanent skin colouring (eg, micropigmentation, semi-permanent make-up and temporary tattooing).⁴ Prior to this, the London boroughs used the London Local Authorities Act of 1991 to regulate special treatment businesses, including cosmetic piercing and micropigmentation, but other local authorities had no statutory powers to regulate body piercing businesses.

The peri-umbilical area is a popular site for self-piercing and a modern fashion statement. Friction from clothing in this area may account for higher infection rates, longer healing time and increased scarring.^{2–5} Infection of an extroverted navel, being a remnant of the umbilical cord, can spread intra-abdominally.⁶ Navel piercings account for 40% of complications arising from body piercing and are commonly associated with infection and scarring.⁵ Body modification as a cause of death has featured in the media—a lip piercing in a young man with cardiac disease leading to toxic shock and death.⁷

There have been reports describing small bowel adhesions to the anterior abdominal wall attributed to umbilical piercing but details of the piercing are not provided.⁶

Intra-abdominal adhesions are a known risk factor for small bowel obstruction accounting for 60–70% of cases within the western world.^{6–8} Between 1989 and 1999, the Medical Protection Society dealt with 13 claims in which adhesions were implicated.⁸ Small bowel volvulus and the ensuing infarction carry a high mortality risk with mortality ranging from 20–100%.⁹ This is the only case where the metallic piercing has caused mesenteric infarction directly, which resulted in death.

The deceased was being treated for depression and was self-piercing; it is not known if the two were related. It is important to recognise the psychological motivation for piercing and the medical consequences.^{2–5} Body modification is a common outlet of personality and emotion. People are often intensely motivated to express themselves through ritualistic or fashionable body modifications.^{2–3–5} There are certain populations 'at risk' from body modification complications—for example, people with allergies or psychological illness. Body modification is popular among young people in the form of piercing and tattooing.¹⁰ However, in this case, the deceased was 55 years old so possibly representing another age range of people who are increasingly piercing.

Body modification is becoming increasingly popular and is practiced across a range of generations, and the medical complications are prevalent to all but are under-reported.² There is a significant incidence of medical complications with body modification ranging from minor to fatal, as in this case.^{2–10} There are some safety measures in place at licensed establishments. However, it is difficult to identify who is at risk and to control self-piercing in unlicensed places.⁴ Moreover, it is impossible to know what the risk factors are for such fatal complications.

Medically it is important to try and prevent fatalities from body modifications, and medical practitioners should try to educate vulnerable patients about the risks of sepsis, allergy and death. They should try to recognise complications of body piercing and be alert

to psychological illness in patients who practice body modification.³

The psychosocial factors of body modification impact the biological and medical complications of body modification. More people will become more extreme with piercing increasing the risk of deadly complications.

Learning points

- ▶ Due to limited regulation of piercing practice, it is likely that the true incidence of complications is under-reported.
- ▶ While many piercing complications may be minor skin infections, the potential for fatal consequences must be recognised by medical professionals.
- ▶ A seemingly innocent piercing may result in visceral injury, systemic illness and have potentially significant forensic implications.
- ▶ Medical practitioners need to inform vulnerable patients about the risks of body modification.

Acknowledgement The authors would like to acknowledge the support of Dr D C Bouch, the Home Office registered forensic pathologist, who undertook the postmortem examination.

Competing interests None.

Patient consent Obtained.

REFERENCES

1. Health and Safety Executive/Local Authorities Enforcement Liaison Committee (HELA) Local Authority Circular. April 2005. <http://www.hse.gov.uk/lau/lacs/76-2.htm> (accessed August 2007).
2. **Stirn A.** Body piercing: medical consequences and psychological motivations. *Lancet* 2003;**361**:1205–15.
3. **Koenig LM, Carnes M.** Body piercing medical concerns with cutting-edge fashion. *J Gen Intern Med* 1999;**14**:379–85.
4. **Meltzer DI.** Complications of body piercing. *Am Fam Physician* 2005;**72**:2029–34.
5. **Ventolini G, Kleeman S.** Adhesions caused by umbilical piercing. *J Am Assoc Gynecol Laparosc* 2003;**10**:281.
6. **Ellis H.** Medicolegal consequences of postoperative intra-abdominal adhesions. *J R Soc Med* 2001;**94**:331–2.
7. **Swift B.** Body art and modification. In: Rutty GN, ed. *Essentials of autopsy practice – recent advances, topics and development*. London: Springer-Verlag, 2004:159–86.
8. **Roggo A, Ottinger LW.** Acute small bowel volvulus in adults. A sporadic form of strangulating intestinal obstruction. *Ann Surg* 1992;**216**:135–41.
9. **Mayers LB, Judelson DA, Moriarty BW, et al.** Prevalence of body art (body piercing and tattooing) in university undergraduates and incidence of medical complications. *Mayo Clin Proc* 2002;**77**:29–34.
10. Lip Piercing death 'Misadventure'. BBC News online 2005. http://news.bbc.co.uk/1/hi/england/south_yorkshire/4429298.stm (accessed August 2007).

This pdf has been created automatically from the final edited text and images.

Copyright 2011 BMJ Publishing Group. All rights reserved. For permission to reuse any of this content visit <http://group.bmj.com/group/rights-licensing/permissions>.
BMJ Case Report Fellows may re-use this article for personal use and teaching without any further permission.

Please cite this article as follows (you will need to access the article online to obtain the date of publication).

Ranga N, Jeffery AJ. Body piercing with fatal consequences. *BMJ Case Reports* 2011;**10**:1136/bcr.05.2010.3020, date of publication

Become a Fellow of BMJ Case Reports today and you can:

- ▶ Submit as many cases as you like
- ▶ Enjoy fast sympathetic peer review and rapid publication of accepted articles
- ▶ Access all the published articles
- ▶ Re-use any of the published material for personal use and teaching without further permission

For information on Institutional Fellowships contact consortiasales@bmjgroup.com

Visit casereports.bmj.com for more articles like this and to become a Fellow