SAS Journal of Surgery
Abbreviated Key Title: SAS J Surg
ISSN 2454-5104
Journal homepage: https://www.saspublishers.com

OPEN ACCESS

Surgery

A typical Pressure Ulcer Location in the Inguinal Fold: A Case Report

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DOI: https://doi.org/10.36347/sasjs.2026.v12i11.014 | **Received:** 19.09.2026 | **Accepted:** 07.11.2026 | **Published:** 16.11.2026

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Abstract **Case Report**

A pressure ulcer is an ischemic skin and soft-tissue injury caused by prolonged pressure, often associated with shear and friction forces. It usually occurs over bony prominences. Its occurrence in non-weight-bearing areas, particularly the inguinal folds, is exceptional and rarely reported We report the case of a 57-year-old woman with paraplegia following spinal trauma and surgery six months earlier, with poorly controlled type 2 diabetes mellitus. She was hospitalized for the management of a stage IV sacral pressure ulcer. Clinical examination also revealed bilateral stage IV inguinal pressure ulcers at an atypical location. These lesions were probably promoted by pressure and friction exerted by an indwelling urinary catheter, combined with moisture, inadequate positioning, and prolonged immobilization. Abdominopelvic computed tomography showed gluteal collections complicated by sacral and coccygeal osteitis. Management consisted of eliminating mechanical factors, providing appropriate local wound care, correcting metabolic and infectious conditions, and performing surgical treatment. This case highlights the importance of careful monitoring of skin folds and contact points of medical devices, which may cause atypical and frequently overlooked pressure injuries.

Keywords: Inguinal pressure ulcer, atypical location, medical device, urinary catheter, paraplegia, immobilization.

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INTRODUCTION

Pressure ulcers are a common complication in bedridden patients and in those with neurological impairment.

They result from prolonged tissue ischemia secondary to excessive pressure, often associated with shear and friction. They classically occur over bony prominences such as the sacrum, heels, trochanters, or occiput.

However, some pressure ulcers occur at unusual sites, particularly in association with medical devices. These lesions, known as medical device-related pressure injuries (MDRPIs), are increasingly recognized but remain underdiagnosed. Urinary catheters, devices widely used in dependent patients, may cause skin injuries through pressure, traction, moisture, and maceration, particularly in skin folds.

Through this case report, we highlight an atypical bilateral inguinal location of pressure ulcers secondary to a urinary catheter, with the aim of raising awareness of this preventable iatrogenic mechanism.

CASE REPORT

This is the case of a 57-year-old woman from and residing in Marrakech, followed for longstanding, poorly controlled type 2 diabetes mellitus treated with oral antidiabetic agents. Her medical history dated back to six months before admission, when a road traffic accident caused spinal trauma. She underwent emergency surgery and developed irreversible postoperative paraplegia, resulting in prolonged immobilization.

She was admitted to our department for the management of advanced pressure ulcers that had developed in the context of prolonged bed rest and sensory impairment.

On admission, the patient was conscious, hemodynamically and respiratorily stable, and afebrile.

Local skin examination revealed:

- A deep stage IV sacral pressure ulcer with purulent discharge.
- Two bilateral stage IV pressure ulcers located in the inguinal folds, with irregular borders and a

fibrinonecrotic base, representing an atypical location.

History-taking and assessment of nursing care conditions revealed prolonged use of an indwelling urinary catheter. Its course and method of fixation, together with local moisture, maceration, and lack of mobility, were considered mechanical factors contributing to these atypical inguinal lesions.



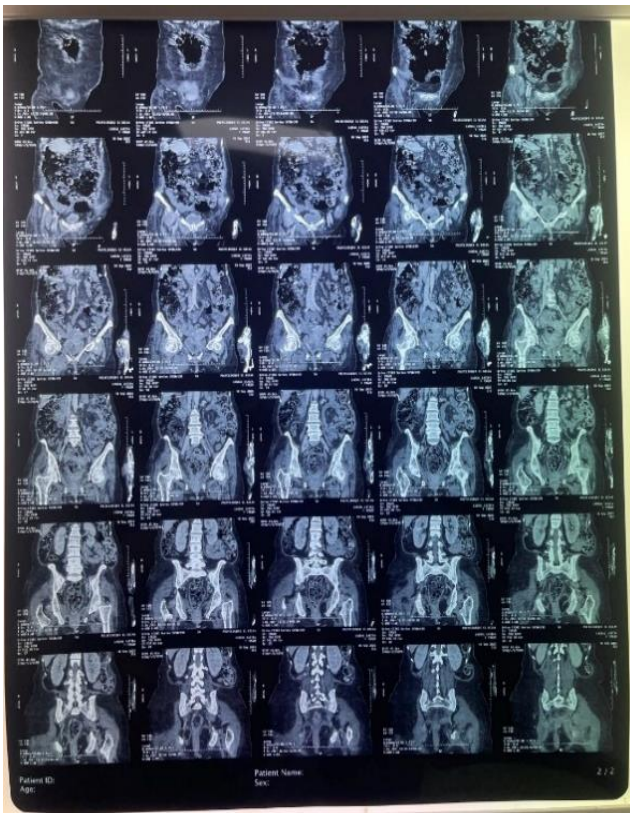
Figure 1: Stage IV sacral pressure ulcer on admission

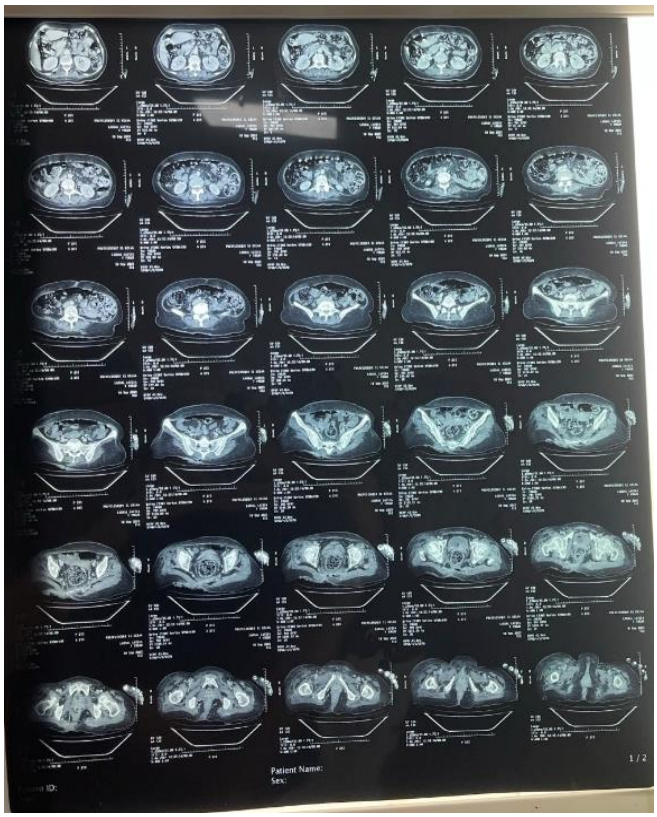


Figure 2: Bilateral stage IV inguinal pressure ulcers on admission

Laboratory tests revealed poorly controlled diabetes, with an HbA1c level of 12%.

Abdominopelvic computed tomography showed ill-defined, confluent collections in the gluteal and coccygeal regions, complicated by sacral and coccygeal osteitis, with infiltration of the presacral fat and mesorectum.





The final diagnosis was a stage IV sacral pressure ulcer complicated by deep infection with sacrococcygeal osteitis, associated with bilateral stage IV inguinal pressure ulcers of mechanical origin related to a urinary device.

Management included:

- Hospital admission and general supportive care.
- Removal of the causative factor by readjusting the urinary catheter and improving patient positioning.

- Regular local wound care with appropriate dressings.
- Correction of metabolic and nutritional disturbances, with diabetes control using insulin therapy.
- Empirical antibiotic therapy, subsequently adjusted according to susceptibility testing after isolation of Pseudomonas aeruginosa.

Local wound progression under treatment

Local wound care led to gradual improvement, with wound cleansing, regression of necrotic tissue, and the appearance of satisfactory granulation tissue.



Figure 3: Initial appearance of the pressure ulcers at the start of local wound care (day 1)



Figure 4: Improvement after debridement and cleansing (day 5)



Figure 5: Regression of necrotic tissue and wound-bed cleansing (day 18)



Figure 6: Onset of satisfactory granulation tissue (day 25)

Surgical treatment:
After an adequate granulating wound bed had been achieved, surgical treatment was performed :

- Approximation of the wound edges using steel wires for the right inguinal pressure ulcer.
- Direct suturing of the left inguinal pressure ulcer.

Figure 7. Postoperative appearance after approximation of the right inguinal pressure ulcer using steel wires and direct suturing of the left inguinal pressure ulcer



Figure 8: Sacral pressure ulcer undergoing granulation

Outcome
The hospital stay extended from September 26, 2025, to November 10, 2025.

The overall outcome was favorable after infection control and improvement of glycemic control. Fever peaks subsided with appropriate antibiotic therapy.

Locally:
The sutured left inguinal site had an uncomplicated course, with no dehiscence or necrosis.

The sacral pressure ulcer and the right inguinal pressure ulcer were managed by secondary intention, with continued wound care in a specialized outpatient clinic after discharge.

DISCUSSION

Pressure ulcers (pressure injuries) are ischemic lesions of the skin and subcutaneous tissues resulting from prolonged pressure, often associated with shear and friction forces. They classically occur over bony prominences such as the sacrum, heels, trochanters, or ischial tuberosities. However, the increasing use of medical devices has led to the identification of a specific subgroup: medical device-related pressure injuries (MDRPIs). These lesions occur at non-classical anatomical sites and remain underdiagnosed despite their increasing frequency [1,3].

In a large multicenter study from the International Pressure Ulcer Prevalence Survey, Kayser *et al.,* reported that 34.5% of hospital-acquired pressure ulcers were associated with a medical device. The lesions mainly affected areas in contact with devices, including the ears, nose, and immobilized limbs, illustrating the diversity of possible locations and the need for increased vigilance among healthcare professionals [2].

Several observational studies conducted in intensive care units have confirmed that the devices most frequently involved are urinary catheters, nasogastric tubes, respiratory devices, and restraint systems. The occurrence of MDRPIs is strongly associated with prolonged immobilization, neurological impairment, malnutrition, diabetes, and clinical severity, which constitute independent risk factors [4–6].

Data from meta-analyses support these observations. Hu *et al.,* estimated an overall MDRPI incidence of approximately 10% among hospitalized patients, with a higher frequency in intensive care units [1]. More recently, Zhang et al., in a meta-analysis including several dozen international studies, confirmed this incidence and identified medical devices as independent risk factors for conventional pressure injuries [3].

Clinical reports published in the literature also illustrate the diversity of MDRPI presentations. One case report described severe urethral erosion secondary to prolonged indwelling urinary catheterization, complicated by deep ulceration due to continuous pressure exerted on the perineal tissues [13]. Similarly, a deep vulvar ulcer caused by a hip spica cast was reported in a young patient, demonstrating that external medical devices may also cause pressure injuries at unusual anatomical sites [14].

Several recent studies have also shown that healthcare professionals' knowledge of MDRPIs remains insufficient. Atypical locations, often distant from conventional pressure-bearing areas, frequently delay diagnosis and management. Targeted training programs and the implementation of prevention protocols can significantly improve early detection [8,10,11].

In our case, the bilateral occurrence of deep pressure ulcers in the inguinal folds represents a particularly exceptional presentation. To our knowledge,

few similar cases have been reported. In this patient, the combination of several risk factors—paraplegia, prolonged immobilization, poorly controlled diabetes, sensory impairment, local moisture, and maceration of the skin folds—together with continuous pressure exerted by an indwelling urinary catheter, probably contributed to the development of these lesions. This observation broadens the spectrum of possible MDRPI locations and highlights that urinary devices may cause severe injuries beyond the infectious complications usually described.

Finally, several recent studies emphasize that MDRPIs may rapidly progress to deep lesions when early signs are not recognized. Studies conducted particularly in intensive care patiente and during the COVID-19 pandemic have shown that failure to regularly inspect device-contact areas increases the risk of advanced lesions [6,9]. Effective prevention relies on daily skin inspection, regular repositioning of medical devices, reduction of pressure, traction, and maceration, as well as ongoing training of healthcare teams [9,11,12].

Conclusion

Medical device-related pressure injuries remain an underrecognized complication and may occur at unusual locations outside conventional pressure-bearing areas. Our case illustrates an exceptional presentation of bilateral inguinal pressure ulcers secondary to a urinary catheter in a diabetic paraplegic patient, associated with a sacral pressure ulcer complicated by osteitis.

This case highlights the importance of systematic monitoring of medical device contact areas, particularly within skin folds, in high-risk patients. Prevention relies on appropriate device positioning, daily skin inspection, limiting pressure, traction, and maceration, and early multidisciplinary management. Greater awareness of medical device-related pressure injuries among healthcare professionals could help reduce their incidence and prevent potentially severe complications.

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