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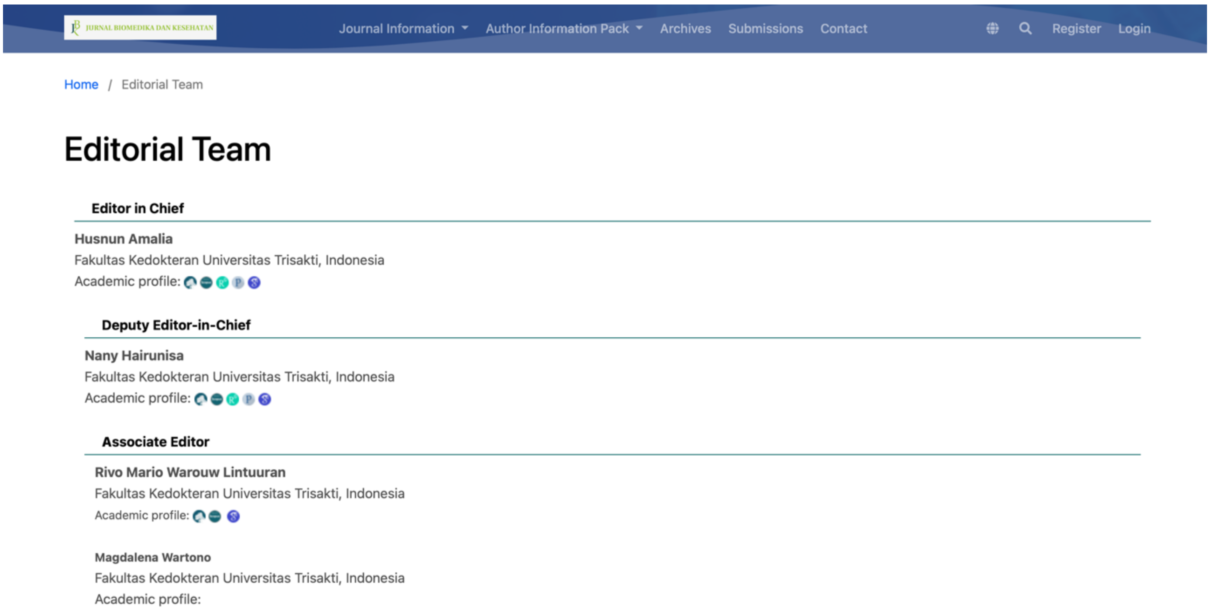

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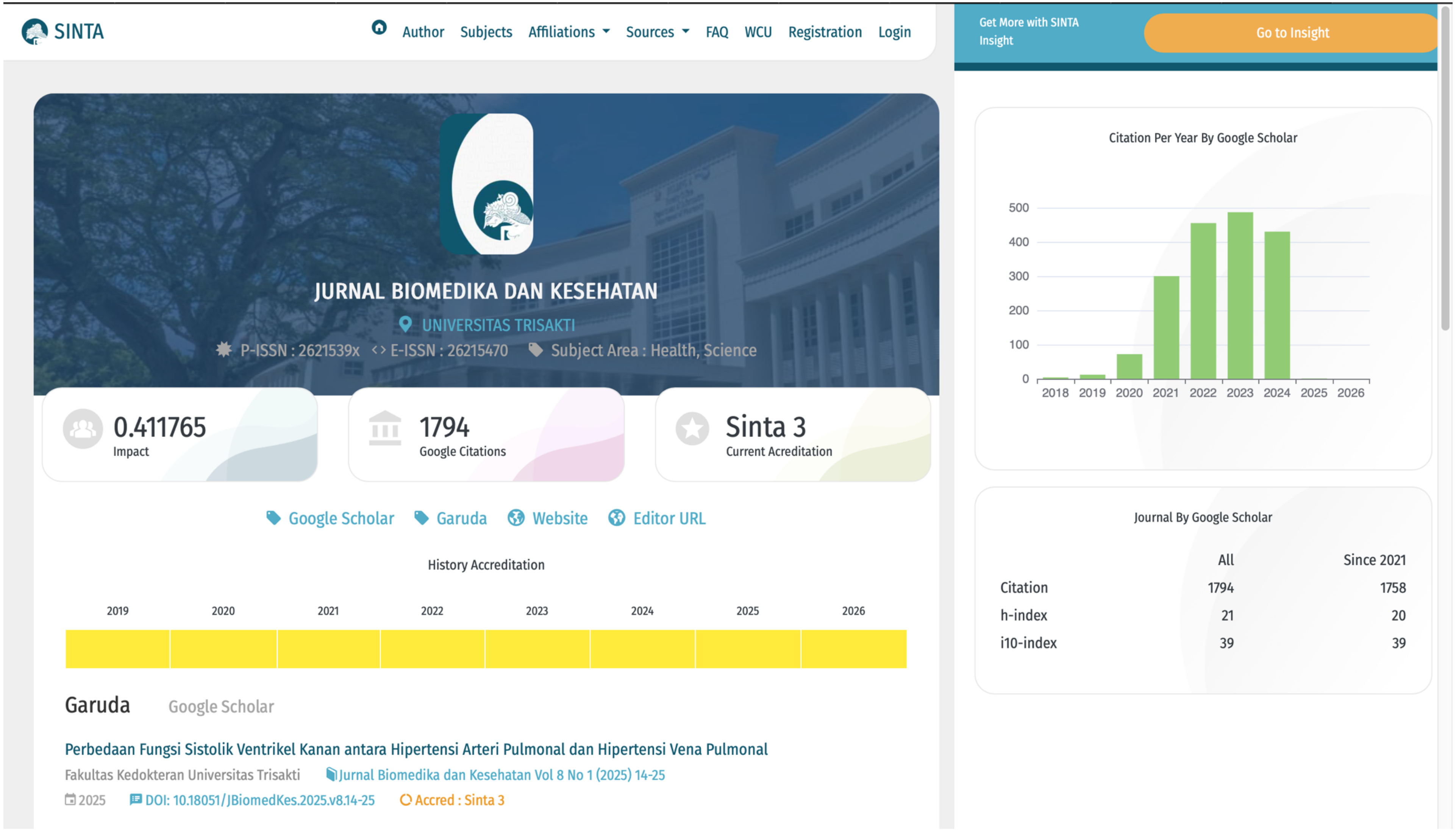

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CASE REPORT

Caesarean Scar Endometriosis: A Case Report

Endometriosis pada Luka Operasi Seksio Sesarea: Suatu Laporan Kasus

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ABSTRACT

Caesarean scar endometriosis is a rare form of extra pelvic extrapelvic or extra-pelvic endometriosis that often presents with nonspecific symptoms, leading to diagnostic challenges. We report the case of a 41-year-old woman who presented with a painful subcutaneous mass at the site of a previous caesarean section, noted eight months post-surgery. MRI imaging revealed a mass suggestive of cutaneous endometriosis, and a wide excision was performed. Histopathological analysis confirmed the diagnosis by identifying endometrial glands and stroma within the cutaneous tissue. We report the case of a 41-year-old woman with a painful subcutaneous mass at the site of a previous cesarean section. The mass was detected eight months after the cesarean section. Following magnetic resonance imaging (MRI), which demonstrated a mass characterized as cutaneous endometriosis, the patient underwent wide excision. Histopathological analysis confirmed the diagnosis by demonstrating endometrial glands and stroma within the cutaneous tissue. Caesarean scar endometriosis is often associated with Pfannenstiel incisions, with a latency period of symptom onset averaging over two years. While imaging, such as MRI, is useful for preoperative assessment, surgical excision remains the definitive treatment. Recurrence is uncommon but can occur. Iatrogenic seeding of endometrial cells during surgery is a likely etiological factor, highlighting the importance of proper surgical technique and wound cleaning. Cesarean scar endometriosis is often associated with a Pfannenstiel incision, with an average latency period of more than two years. Although imaging such as MRI is useful for preoperative assessment, surgical excision remains the definitive treatment. Recurrence is rare but can occur. Iatrogenic endometrial cell seeding during surgery is a likely etiologic factor, highlighting the importance of proper surgical technique and wound cleansing. The conclusion was although rare, cutaneous endometriosis should be considered in women presenting with cyclical pain and masses at surgical scars post-caesarean - cyclic pain and masses in their post-cesarean scars. Early recognition and surgical intervention are key to effective management and prevention of cutaneous endometrosis recurrence.

Keywords: Cutaneus Endometriosis; Caesarean Scar; Abdominal wall mass.

ABSTRAK

Endometriosis pada luka operasi seksio sesarea merupakan bentuk langka dari endometriosis ekstrapelvik yang sering menimbulkan gejala tidak spesifik sehingga menimbulkan tantangan dalam penegakan diagnosis. Kami melaporkan kasus seorang wanita berusia 41 tahun yang datang dengan keluhan benjolan subkutan nyeri pada bekas luka operasi seksio sesarea yang muncul delapan bulan pascaoperasi. Pemeriksaan Magnetic Resonance Imaging (MRI) menunjukkan massa yang mengarah pada endometriosis kutaneus, sehingga dilakukan eksisi luas. Hasil analisis histopatologi menegakkan diagnosis dengan ditemukannya kelenjar dan stroma endometrium di dalam jaringan subkutan. Endometriosis pada luka seksio sesarea umumnya berhubungan dengan insisi Pfannenstiel, dengan rata-rata periode laten gejala lebih dari dua tahun. Pemeriksaan pencitraan seperti MRI bermanfaat untuk penilaian praoperatif, namun eksisi bedah merupakan terapi definitif. Kekambuhan jarang terjadi, tetapi dapat ditemukan. Penanaman sel endometrium secara iatrogenik selama tindakan pembedahan dianggap sebagai faktor etiologi utama, sehingga penting untuk menerapkan teknik pembedahan yang tepat dan pembersihan luka secara menyeluruh. Kesimpulan kasus ini adalah meskipun jarang, endometriosis kutaneus perlu dipertimbangkan pada wanita dengan nyeri siklik dan massa pada bekas luka operasi seksio sesarea. Pengenalan dini dan intervensi bedah yang tepat merupakan kunci keberhasilan penatalaksanaan dan pencegahan kekambuhan endometriosis kutaneus.

Kata Kunci: Endometriosis Kutaneus; Luka Seksio Sesarea; Massa Dinding Abdomen.

INTRODUCTION

Endometriosis is a gynecological disorder characterized by endometrial tissue outside the uterine cavity, most commonly involving pelvic structures. A rare manifestation of this condition is **cutaneous endometriosis**, particularly involving previous surgical scars, such as those from cesarean sections.[1] Although the incidence of cesarean scar endometriosis is estimated to be low, it is often underdiagnosed because of its nonspecific presentation and delayed onset of symptoms.[2] Patients typically present with a palpable, sometimes painful, mass near the surgical incision site and often exhibit cyclical pain associated with menstruation.[3]

The latency period between the initial surgical procedure and symptom development can vary, with some cases reporting delays of up to several years.[4] Magnetic resonance imaging (MRI) can aid preoperative diagnosis, but histopathological confirmation remains the gold standard.[5]

The pathogenesis of cutaneous endometriosis is thought to involve iatrogenic implantation of endometrial cells into the surgical wound during cesarean delivery. Precautions such as careful surgical technique and thorough irrigation of the wound site have been recommended.[6]

This case report describes a rare case of cutaneous endometriosis involving a caesarean section scar, detailing the clinical presentation, diagnosis, surgical treatment, and histological findings, and is supplemented by a literature review.

CASE REPORT

This case report describes the clinical course of a 41-year-old female patient who developed a subcutaneous mass at the site of a previous cesarean section. The patient provided informed consent for publication of her clinical information and images. A detailed history and physical examination were performed, followed by imaging and surgical evaluation.

The patient complained of a progressively enlarging lump at her lower abdominal surgical scar, accompanied by cyclical pain correlated with menstruation. Magnetic Resonance Imaging (MRI) was performed to evaluate the nature and extent of the mass and revealed a lesion suggestive of cutaneous endometriosis located within the subcutaneous tissue overlying the rectus sheath (Figure 1). Differential diagnoses, including lipoma, incisional hernia, and suture granuloma, were considered but excluded based on MRI findings.

Surgical intervention was performed under general anesthesia. A wide local excision of the mass was performed with adequate margins to minimize the risk of recurrence. The excised tissue was sent for histopathological examination. Histologic analysis included hematoxylin and eosin (H&E) staining of formalin-fixed, paraffin-embedded tissue sections (picture 2). Microscopic evaluation confirmed the presence of endometrial glands and stroma, consistent with a diagnosis of cutaneous endometriosis. Postoperative follow-up was conducted to monitor for complications and signs of recurrence. The follow-up period was 6 months after surgery, during which the patient remained symptom-free with no recurrence. The patient remained symptom-free at the time of reporting

DISCUSSION

Cutaneous endometriosis, particularly in surgical scars after cesarean section, is a rare and often underrecognized clinical entity. The pathogenesis is generally attributed to iatrogenic implantation of viable endometrial cells into the subcutaneous tissue during uterine incision and closure.[6] Once implanted, these cells respond to hormonal stimulation, resulting in cyclical pain and mass formation at the scar site, as observed in this patient.[7] At the cellular and molecular level, implanted endometrial cells can survive and proliferate in ectopic locations by stimulating angiogenesis and expressing estrogen and progesterone receptors. Inflammatory mediators such as IL-1β and TNF-α contribute to the maintenance of ectopic tissue. These mechanisms explain how endometrial cells can adhere to and grow within cutaneous tissue following surgical implantation.

The clinical presentation in this case—cyclical pain, a palpable mass on the caesarean scar, and a latency period of approximately 8 months—is consistent with the typical features described in the literature.[1,2] According to a retrospective review by Zhang et al[4], the average latency period for symptom onset was 31.6 months, with most patients presenting with Pfannenstiel incisions, further supporting the relevance of incision type in pathogenesis[8]. The Pfannenstiel incision, because of its transverse orientation and proximity to the uterine cavity, may facilitate direct inoculation of endometrial tissue during closure, thereby increasing the risk of scar endometriosis.

Preoperative diagnosis remains challenging due to nonspecific symptoms. In this case, MRI proved a valuable imaging modality, allowing accurate localization and characterization of the lesion.[9] This is consistent with Ozel et al.[5], who emphasized the utility of MRI in differentiating cutaneous endometriosis from other soft-tissue masses, such as lipomas or hernias.

Histopathological confirmation is essential for definitive diagnosis. The presence of endometrial glands and stroma in subcutaneous tissue, as demonstrated in this case, confirms endometriosis. Although fine-needle aspiration cytology (FNAC) has been reported in some cases, excisional biopsy remains the gold standard.[3]

Surgical excision with adequate margins is the treatment of choice and was successfully used in this case. Recurrence rates are relatively low when complete resection is achieved. A review by Lopez-Soto et al.[10] reported recurrence in only 9% of cases over a 20-year period, highlighting the importance of thorough surgical technique.

Preventive strategies, such as irrigating the surgical wound before closure and avoiding reuse of instruments between the uterine and abdominal wall layers, have been proposed to minimize the risk of endometrial cell implantation.[6] Raising awareness of this condition among clinicians is crucial for early diagnosis and prompt intervention, which can prevent chronic pain and improve patient outcomes.[11]

CONCLUSION

Caesarean scar endometriosis is a rare but important differential diagnosis in women presenting with cyclical pain and a palpable mass at or near a surgical incision site. Early recognition, supported by appropriate imaging and confirmed by histopathological evaluation, is essential for timely diagnosis. Surgical excision remains the gold standard for both diagnosis and treatment, with a low risk of recurrence when performed adequately. Increased clinical awareness and adherence to preventive surgical practices may reduce the incidence of this condition. Meticulous surgical techniques, including wound irrigation and instrument change before abdominal wall closure, are recommended to prevent iatrogenic implantation.

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AUTHORS CONTRIBUTION

DY: conceptualized, designed the study, manuscript preparation, conducted the literature review, and served as the corresponding author. JPR: The clinical management (diagnosis and surgical intervention) provided clinical insights into the case discussion. KSA: data acquisition, literature review, and formatting of the manuscript. MAF: data organization, manuscript drafting, reference management. EX and Y: assisted in the preparation and analysis of histopathological data and the discussion section. S: interpreting radiological findings and ensuring accuracy of clinical imaging descriptions. MR: reviewed imaging data and provided expert input on radiodiagnostic evaluation. KM: perioperative analysis and reviewed the manuscript for clinical accuracy and relevance. MF: reviewing the histopathological results and validating diagnostic conclusions from a clinical pathology perspective.

All authors have read and approved the final version of the manuscript and agree to be accountable for all aspects of the work. If the editor wishes to conduct a blind review, the author's identity in the manuscript should be removed from the reviewer's document.

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CONFLICT OF INTEREST

The authors declare that there is no conflict of interest regarding the publication of this case report.

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