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# Unexpected Presentation - Undiagnosed Dermoid Cyst Presenting as Ruptured Ectopic Pregnancy

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**Abstract**

Ectopic pregnancy occurs when fertilised ovum attaches outside the endometrial cavity of the uterus. Diagnosis is critical and is based on history, clinical examination and diagnostic imaging such as transvaginal ultrasound (TVUSS) which may demonstrate an adnexal mass in a woman with positive pregnancy test. We present a case of a 26-year-old indigenous Malaysian woman who presented to emergency department with pelvic pain. She was noted to have recent onset vaginal bleeding and positive b-HCG. Transvaginal USS reported significant free pelvic fluid associated with an empty uterus and right adnexal mass. A ruptured ectopic pregnancy was presumed primary diagnosis. The patient was taken to theatre for emergency laparoscopic evaluation where, paradoxically, no sign of abnormal bleeding was identified but instead, a large, unruptured 20cm, right sided ovarian cyst which filled the pouch of Douglas (POD) and extended superiorly along the posterior abdominal wall. This was subsequently confirmed to be an intact, Dermoid cyst.

**Keywords:** Ectopic pregnancy; Dermoid cyst; Transvaginal USS; Intra-peritoneal free fluid; Vaginal bleeding; Pregnancy

## Background

Transvaginal ultrasound (TVUSS) is a trusted and reliable method of demonstrating pelvic anatomy and in particular, variations of form including the presence of pelvic free fluid [1]. In the setting of pain and early pregnancy, the latter when identified without evidence of a clearly defined intra-uterine gestational sac, is usually pathopneumonic of intrabdominal bleeding presumed secondary to a ruptured ectopic pregnancy [2]. It is a potentially life threatening complication and will all most always require emergency surgical management. This case presents a clinical scenario where this not the case, but instead an unsuspected finding of chronic adnexal pathology.

## Case Report

A 26-year-old lady presented acutely to the emergency department of a rural general hospital with recent onset pelvic pain. On arrival she was noted to have moderate discomfort associated with vaginal bleeding. Her cardiovascular signs were stable and her blood work up unremarkable apart from a positive quantitative b-HCG. The initial level was 2220. The patient had not been aware that she was pregnant. A TVUSS was arranged urgently and demonstrated a large, complex hypoechoic area in the right adnexa with internal echoes and potential sac like structures. There was a large volume of free fluid in the pelvis estimated to be at least 1 litre. There was no gestational sac identified in either the uterus or adnexa. The pelvic free fluid was suggestive of hemoperitoneum and a diagnosis of likely ruptured ectopic pregnancy was made.

The patient's admission was however complicated by social demographics. She was an indigenous woman from Malaysia, working in remote western Victoria as a seasonal fruit-picker. She did not speak English and was not Medicare funded. She had no support persons present. Communication was facilitated through hospital interpreter services. In this setting, despite care and reassurance, she remained frightened and was reluctant to consent to formal operative evaluation. Despite reservations from medical care-givers, expectant care was supported by clinical examination which demonstrated stable cardiovascular findings and haematological markers which suggested that there was no evident or immediate compromise from the apparent haemorrhage. This seemed paradoxical. Repeat communication

with the radiology department confirmed the initial reported findings and so the diagnosis remained highly suspicious of ruptured ectopic pregnancy. In the interim of expectant care, IV access was secured and bloods taken for 2-unit crossmatch and repeat FBC arranged overnight. The patient remained fasted in the Emergency Department with close nursing observation overnight.

The following morning, she had a moderate tachycardic at 105bpm, however blood pressure was normal at 116/70mmHg, with no postural drop. The patient was well perfused with warm peripheries and normal oxygen saturation on room air. Her blood workup showed a small drop of haemoglobin from 127g/dl to 114g/dl which was thought to be consistent with haemodilution secondary to IV fluid hydration. Her discomfort continued but was not distressing. There was ongoing slight vaginal loss and repeat b-HCG showed a fall of nearly 700 units to 1500. Examination suggested mild peritonism and so once again, the clinical team advocated operative management. This was communicated carefully to the patient with the help of a young medical student who fortuitously, was able to speak face-to-face with the patient in her native language (Mandarin). With this more intuitive and empathic communication, the medical team were able to resolve the patient's apprehension and together agree to recommended action plan. Accordingly, the patient was listed for emergency surgery to proceed as soon as possible.

In theatre, speculum examination demonstrated ongoing vaginal bleeding from the external cervical os. Digital examination found diffuse fullness in the posterior fornix. The uterus was not separately palpable and the cervix was closed. A direct, visual entry laparoscopy showed unexpectedly, no free fluid and significantly, no evidence of hemoperitoneum. Instead, there was a large, right sided ovarian cyst filling the Pouch of Douglas and extending across the midline up along the posterior abdominal wall. There was no evidence of spontaneous rupture or torsion. The cyst was left intact. Given the known drop in b-HCG, a dilation and curettage was performed and sent for histopathology. There were no intra-operative complications reported.

Post operatively, the findings were shared with radiology. The initial films were reviewed by senior staff and though the initial diagnosis was questioned, it was still felt to be a valid interpretation of the results when found. CT of chest, abdomen and pelvis was recommended which subsequently showed interconnected, fat-containing cystic masses with calcified tooth-like structures and other more solid material, total size approximately 20cm. The findings were consistent with a large ovarian dermoid cyst. No evidence of metastasis, lymphadenopathy or bowel obstruction was reported. Histopathology of currettings reported secretory endometrium with Arias Stella reaction. Chorionic villi were not detected. Serial b-HCGs showed a continued down trending to 188, 5 days later. Additional bloods were sent for tumour markers Ca 125 and Ca 19.9 which were all normal at 87H U/ml (<35), and 131H U/ml (<35) respectively.

## Discussion

Suspicion of ruptured etopic pregnancy is usually a surgical emergency [2]. In this case report, the evidence was resolute. There were symptoms of pelvic pain, vaginal bleeding, a raised serum hCG and most significantly, a TVUSS demonstrating high likelihood of free pelvic fluid consistent with vascular bleed. In normal settings, this combination of findings would be sufficient to advocate immediate, active surgical treatment. In this case however, we were not able to do so because the patient was reluctant to proceed. Acquiescing to this required re-consideration of the presenting findings. Whilst the history and radiological findings were seemingly conclusive, the clinical findings were incongruent with the severity of harm predicted. Whilst we could not reconcile this variance, it gave us some reassurance that initial conservative care was not an altogether inappropriate choice. In fairness and in accord with the patient's reluctance to comply, it was our only choice but had things been otherwise and the patient's condition more fragile, we would no doubt have argued more strongly for active management.

An important reminder from this case is to highlight the absolute importance of informed consent and of the collaborative decision making and shared communication that makes this possible. Whilst we might know what we think is best, we can do nothing if we cannot bring our patient to that same understanding. This is particularly important when patients are estranged or isolated socially by language and other cultural barriers. In this case, our patient was unable to understand English, she was young and without any significant or meaningful social support and she was faced with a diagnosis and procedure that for her, felt overwhelmingly frightening. To have moved directly to theatre, whilst it may have seemed appropriate to us, was not an option. It prompts us to remember that this may equally for so for other patients who may feel to be without choice when asked to follow medical dictates and are thus exposed to risks that perhaps need not occur or would better occur at a time when the patient is not sufficiently prepared. These risks may include the surgical risk of intervention and perhaps, with just as equal import, the psychological apprehensions and regrets that a patient may feel afterwards. We note however that such negotiations are not without risk. To delay too long may permit catastrophic deterioration and thus a greater degree of complication or harm that might otherwise have been avoided. This calls for balance. It demands conciliation with the patient upon whom these risks occur, not only of the pathology but of the processes of intervention requested of them. This case highlights the difficulties that can occur in finding this shared consent. Thankfully, we had the liberty to delay our desire for immediate action and fortuitously, to avail ourselves with improved communication and thus develop the much-needed rapport to proceed safely [3,4].

This quandary highlights a dilemma of much of remote health care in regional north-west Victoria. The patient demography


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will include many non-Australian residents living in situations of social isolation. Services to bridge these gaps, such as face-to-face language interpretation and support are often limited, and the capability structure of the hospital service may be such that emergency care of potentially life-threatening situations is highly regulated to ensure best opportunistic practice. All of this amounts to a proclivity to treat patients as conditions and to fit them in to a service model that best aligns with our ability to serve. These limitations challenge our courage to step outside standard guidelines for fear of failure and regrettably, for the shame of fingers that are pointed critically thereafter – usually by metropolitan centres where such risks are so much less apparent.

This case also presents the paradox that can arise when clinical findings belie the anticipation of diagnostic investigation. In our case, we assumed that a massive intra-abdominal bleed had occurred. We also knew that the patient was pregnant and although dates were uncertain, the risk of a ruptured ectopic seemed inevitable. Whilst we were cognizant of the clinical findings, and in particular the sustained stability of cardiovascular function, we felt compelled to commit to immediate surgical intervention. That we were not able to, forced us to re-think the entire presentation and develop a broader perspective of likely aetiology. Whilst this did not negate our desire for surgical management, it did provide some recompense to support a less active approach to immediate care. When we did get to go to theatre, we expected to find a pelvis full of blood. We did not. Instead, we found a large, unruptured ovarian cyst. This initially threw us into cognitive turmoil. Where was all the blood? How could we reconcile what we've found with what we expected to find? What do we do now? All of this requires recalibration of strategy, adjusting the known findings to a new paradigm to ensure that subsequent action remains appropriate and safe. We knew the patient was pregnant, we were expecting to find a ruptured ectopic pregnancy and yet found no evidence of tubal disease or abnormal bleeding. We examined the cyst carefully. We noted that it was perfused, and that there was no evidence of rupture. Given that the findings were not complicated, though we could not exclude a compressional obstruction upon other structures secondary to its weight, we resolved not to take definitive action. We also surmised that the falling hCG was consistent with a failing pregnancy and so resolved to perform curettage at the end of the procedure. Immediately after surgery, we had face to face discussion with the radiology team. Re-examination of the initial films conceded that whilst an alternative diagnosis may have been possible at the time of initial examination, they would still have abdicated priority to that of free peritoneal fluid. We discussed further management and agreed to arrange CT scan of chest, abdomen and pelvis and to arrange tumor marker screening. These subsequently confirmed that the cyst was a Dermoid with likely benign aetiology. This process of shared communication is essential in modern medicine where multidisciplinary teams, though essential to collaborative care, are often fragmented geographically within the hospital environment leading to discontinuity of process and often, a failure to communicate the outcome of management decisions.

To share openly and without blame, allows opportunity to learn and deepen clinical experience which ultimately, allows us to become better clinicians, particularly in the setting of unusual or complicated clinical presentations. For the patient, it allows us to develop an informed understanding of her presenting complaint, the underlying pathology and a strategy for safe aftercare empowering her to make a timely and personally resonant choice for best possible definitive care [5,6].

Given the eventual diagnosis of dermoid cyst, a more abstract question that arose was whether the positive hCG was indeed of placental origin and thus a marker of pregnancy [7] or, may have arisen as a tumor marker of the Dermoid cyst. While case reports can be found where this is so [8], it seems unlikely in this case because serum levels were dropping spontaneously and endometrial histology was suggestive of progesterone effect likely to be associated with early pregnancy. We speculate that the patient was indeed pregnant and suffered from either a spontaneous miscarriage or, albeit less likely, an unruptured ectopic pregnancy that resolved spontaneously.

## Conclusion

We present this case to illustrate the perplexities that arise when faced with a clinical outcome not in keeping with investigative findings. It asks us how to adapt, how to provide safe care that does not exceed patient consent and understanding and yet still ensure best possible immediate outcome. It highlights the challenge of informed consent and ensuring that despite our best intent, our actions must remain aligned to the patient's understanding and permission for treatment. Our case demonstrates how critical this is in a multicultural setting where those needs may be more difficult to comprehend and the variance they create, more uncomfortable to tolerate particularly in a hospital service isolated from tertiary backup. Finally, our case affirms the importance of clinical cognizance, and the broad perspective of clinical acumen that allows critical judgement to embrace all aspects of observational and investigative workup. It highlights teamwork, communication and the power of a constructive culture of learning where the outcomes of action can be communicated transparently, without prejudice or blame to evolve and improve the performance of us all individually as well as collectively which ultimately means, safer care for the patients we look after, no matter who they are, where they come from, and with whatever they present with, especially when it is one that confounds us all.

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