

CONCURRENT HYDROSALPINX AND OVARIAN HYDROBURSITIS IN A CROSSBRED JERSEY COW

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ABSTRACT

A crossbred Jersey cow was referred with a history of repeat breeding syndrome. Routine gynaeco-clinical examination revealed normal uterine tract with palpable cyst-like structures near the right ovary and uterine tube. Trans-rectal ultrasonography confirmed the presence of large, anechoic, cystic structure adjacent to the right ovary, consistent with an ovarian hydrobursitis coupled with hydrosalpinx. Early and accurate ultrasonographic diagnosis is essential for guiding clinical decision-making, particularly in repeat breeding cases, as timely intervention can significantly enhance reproductive outcomes and declare the fertility potential of valuable breeding animals

Keywords: crossbred Jersey cow, hydrosalpinx, ovarian hydrobursitis,

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INTRODUCTION

Reproductive tract pathologies, particularly involving the ovaries and oviducts, are significant contributors to infertility in bovines. Among these, hydrosalpinx, characterized by fluid-filled

distension of the oviduct, and ovarian hydrobursitis or cystic bursa ovarica, marked by excessive fluid accumulation within the ovarian bursa, are relatively rare but clinically significant conditions (Hatipoglu *et al.*, 2002). This report underscores the pivotal role of ultrasonographic imaging in the differential diagnosis of adnexal pathologies in bovines, enabling accurate identification of reproductive abnormalities such as tubo-ovarian cysts and ovarian hydrobursitis. Furthermore, this case contributes to the limited clinical documentation available on hydrosalpinx and cystic bursa ovarica in a crossbred Jersey cow highlighting the diagnostic value of advanced imaging in veterinary reproductive medicine.

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CASE HISTORY AND OBSERVATION

A 5-year-old pluriparous Jersey crossbred cow on its 4th parity was presented to the Veterinary Clinical Complex, Namakkal, with a history of repeat breeding and was inseminated 20 days back. There was no history of puerperal complications. On external examination the vulva was shrunken with pink and moist vaginal mucous membrane without any evidence of discharge. On rectal examination, the uterus was observed to be flaccid and symmetrical with the closed cervix. Further palpation of the genital tract revealed both ovaries; however, a soft fluctuating mass was palpated adjacent to the right ovary extending towards the oviduct. Transrectal ultrasonographic examination (Sonoray DS 50 plus) with 7.5MHz trans rectal linear transducer revealed a corpus luteum (14.4 mm) and a small follicle (4.7 mm) on the right ovary (Fig 1), indicative of ovarian cyclicity. On further observation, a well-defined, solitary thin-walled, anechoic structure (approximately 40.0 mm in diameter) was visualized cranial to the right ovary (Fig 2). Linear anechoic structure suggestive of fluid filled right oviduct was also visualized. Fluid filled oviduct was confirmed by the absence of Colour Doppler signals in the anechoic region (Fig.3). Left ovary had a regressed corpus luteum (10.0 mm) without any abnormalities (Fig.4). Based on the gynaeco-clinical and ultrasonographic findings the case was diagnosed as 'Ovarian hydrobursitis with hydrosalpinx'.

DISCUSSION

Hydrosalpinx refers to the abnormal dilation of the oviduct caused by fluid accumulation, typically resulting from chronic salpingitis or adhesions surrounding the ovary (Purohit, 2014). Similarly, cystic bursa ovarica occurs due to excessive fluid collection within the ovarian bursa, potentially associated with trauma or inflammatory sequelae (Arun *et al.*, 2017). Reports from slaughterhouse studies have documented the incidence of hydrosalpinx (0.36%) and cystic bursa ovarica (0.18%) as uncommon but significant causes of infertility in cows (Hatipoglu *et al.*, 2002). Acquired tubo-ovarian cysts are typically secondary to chronic inflammatory conditions such as salpingitis or oophoritis, which promote adhesion formation between the fimbrial end of the oviduct and the ovary, ultimately resulting in fluid entrapment and cyst development (Azawi and Ali, 2015; Purohit, 2014). Though both conditions may be asymptomatic initially, they can impair fertility by physically obstructing gamete transport or ovum release.

Tubo-ovarian cysts in cattle are rare and often misdiagnosed as ovarian follicular cysts or para-ovarian cysts during routine palpation due to their similar anatomical location and cystic structure. In the present case, ultrasonographic examination was critical in identifying the solitary cystic structure. The anechoic, fluid-filled mass was detected adjacent to the ovary with no evidence of parenchymal continuity with

the ovary, consistent with the findings of Purohit (2014) and Satheshkumar *et al.* (2019). Ultrasonographic differentiation is vital, as it offers real-time imaging of fluid characteristics, location, and anatomical relationships (Sofi and Singh, 2018). The lack of ovarian enlargement and presence of corpus luteum supported the non-functional nature of the cyst.

Unlike follicular cysts, the tubo-ovarian cysts originate from the mesosalpinx or periovarian structures (Azawi and Ali, 2015) and hence not associated with hormonal imbalance (Purohit, 2014; Patra *et al.*, 2012). They may become clinically relevant only when they are large enough to cause mechanical interference with gamete transport (Dawood, 2010). Even though the present case was a unilateral pathology, extensive periovarian fluid accumulation and tubal changes, even in cyclic animals, may compromise fertility if ovulation and fertilization are hindered mechanically as emphasized by Satheshkumar *et al.* (2019).

Ultrasonography enables real-time visualization of ovarian and peri-ovarian structures, offering superior diagnostic precision and thus aid in differential diagnosis from follicular cysts, by which unnecessary

hormonal therapies can be avoided. Early diagnosis helps avoid repeated unsuccessful inseminations and improves reproductive outcomes (Roberts, 1986; Noakes *et al.*, 2009). Depending on the size and impact on fertility, management may range from monitoring to surgical excision (laparotomy or laparoscopy in high-value animals). In this case, no surgical intervention was undertaken, and the cow was monitored for subsequent estrous cycles and reproductive performance.

Concurrent hydrosalpinx and cystic ovarian bursa are uncommon yet clinically important reproductive pathologies in cattle. Accurate diagnosis via ultrasonography is essential to distinguish these lesions from functional ovarian cysts and to assess fertility prognosis. While unilateral cases may retain reproductive potential, early identification is critical for timely management in breeding animals.

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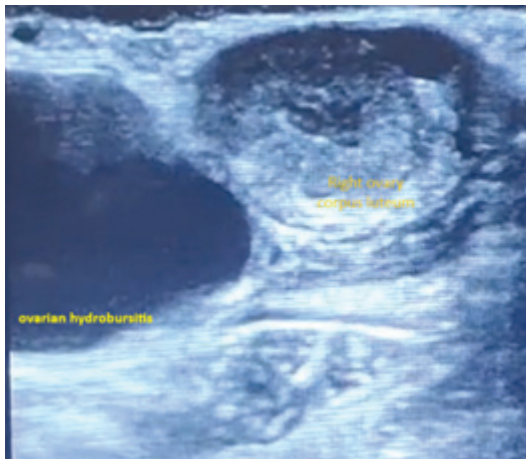


Fig.1. Right Ovary with CL

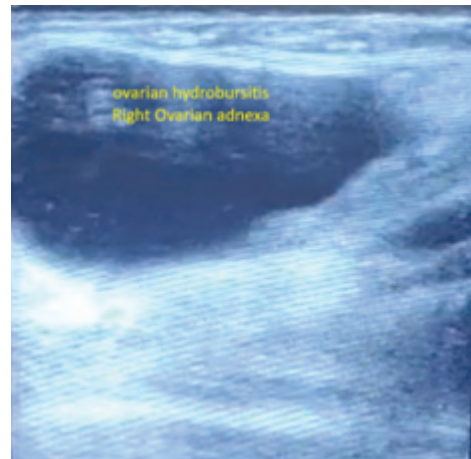


Fig.2. Hydrobursitis adjacent to right ovary

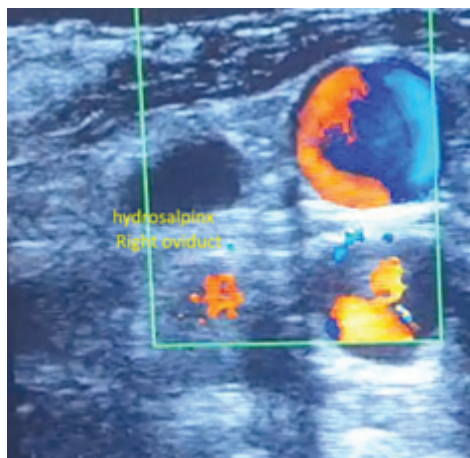


Fig.3. Hydrosalpinx (Note the differentiation between blood vessel and fluid filled oviduct)

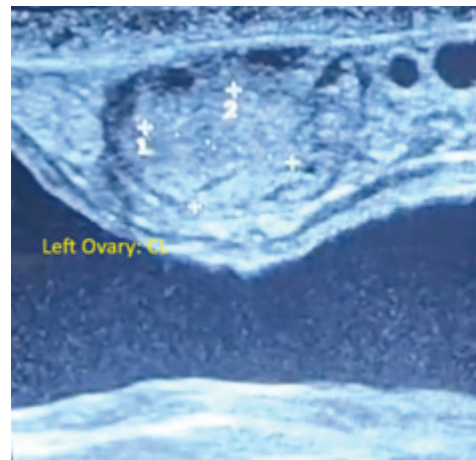


Fig.4. Left ovary with regressed CL

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