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Groin lumps during pregnancy: Exploring the knowledge gap among surgeons and obstetricians regarding round ligament varicosities

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Abstract

BACKGROUND: This cross-sectional pilot study aimed to evaluate awareness and management strategies among obstetricians and surgeons in the Kingdom of Saudi Arabia for round ligament varicosities (RLV) during pregnancy.

MATERIALS AND METHODS: An online questionnaire was distributed through convenience sampling to surgeons and obstetricians across the Kingdom of Saudi Arabia. It assessed demographics, clinical knowledge, experience in diagnosing and managing groin lumps during pregnancy, and engagement in continuing medical education.

RESULTS: Of the 39 participants, 56.41% ($n = 22$) were obstetricians and 43.59% ($n = 17$) were surgeons, with the majority having 5–10 years of practice (35.90%, $n = 14$). Groin hernia was reported as the most frequent diagnosis for groin lumps during pregnancy (43.59%, $n = 17$), whereas only 7.69% ($n = 3$) identified RLV, indicating a significant gap in recognizing RLV. Furthermore, 35.90% ($n = 14$) recognized RLV as a differential diagnosis, but only 25.64% ($n = 10$) were aware of its management.

CONCLUSION: RLV, which is more common than hernias during pregnancy, is often misdiagnosed due to its similar presentation. Accurate differentiation, often achieved through ultrasound, is crucial as management strategies significantly differ. This study underscores the need for enhanced awareness and training among obstetricians and surgeons to accurately diagnose and manage RLV. The observed knowledge gaps highlight the critical role of continuous medical education in improving patient care. These findings will guide a larger study to assess practices across the Kingdom and develop national recommendations for the management of RLV and groin hernias during pregnancy.

Keywords:

Diagnostic accuracy, hernia misdiagnosis, obstetric surgery, pregnancy groin lump, round ligament varicosity, ultrasound imaging

Introduction

Round ligament varicosity (RLV) is a relatively rare condition characterized by the dilation of veins in the round ligament, most commonly occurring during pregnancy.^[1] While inguinal hernia is prevalent in the general population, the occurrence of incarcerated inguinal hernia

during pregnancy is exceedingly rare, despite its clinical resemblance to RLV. Moreover, the prevalence of RLV at about 0.13% is comparable to that of inguinal hernias in pregnancy, that is, 0.12%.^[2,3] Importantly, RLV itself is not considered a precursor or risk factor for developing inguinal hernias later in life.^[4] Accurate differentiation between RLV and inguinal

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hernia is crucial, particularly in pregnant patients, to prevent unnecessary surgical interventions, which pose additional risks to both the mother and the fetus.^[5] While inguinal hernias typically require surgery, RLV is generally managed conservatively.^[6]

Grayscale and color Doppler ultrasonography, along with dynamic inguinal ultrasound, are effective diagnostic tools for RLV.^[7,8] Characteristic ultrasonographic features include a prominent venous plexus and smaller varices, which exhibit a “bag of worms” pattern,^[9] not typically seen in inguinal hernia or other groin conditions such as Nuck’s cyst or femorocele.^[10]

Although RLV is typically benign and not an emergency, complications such as thrombotic events can arise, particularly in patients with underlying conditions such as cirrhosis or portal hypertension.^[11-13] Misdiagnosis of RLV can result in unnecessary surgical interventions or delayed management, exacerbating patient outcomes.

A recent systematic review of 48 studies involving 158 pregnant women with RLV highlights the diagnostic challenges and frequent misdiagnosis of this condition.^[14] In fact, up to 68.3% of cases were initially misidentified as inguinal hernias.^[15] Although the relative rarity of RLV compared to inguinal hernias may contribute to this lower awareness, several studies demonstrate that RLV can present with groin swelling during pregnancy, including bilateral presentations.^[16-20] This underscores the need for heightened clinical awareness when diagnosing groin lumps in pregnant patients. A diagnostic pathway for managing groin lumps during pregnancy has already been proposed.^[21]

Given these diagnostic challenges, we hypothesize that surgeons and obstetricians may have limited understanding of the distinctions between RLV and inguinal hernias, potentially leading to misdiagnosis and inadequate treatment. This study aims to evaluate healthcare professionals’ awareness and diagnostic approaches to RLV, aiming to bridge this knowledge gap and improve patient outcomes through clearer clinical protocols.

Materials and Methods

Study design and data collection

This cross-sectional study utilized an online questionnaire to collect data from 39 surgeons and obstetricians in Saudi Arabia. The questionnaire, distributed via email and social media, included questions on demographics, clinical knowledge, experience in diagnosing and managing groin lumps during pregnancy, and engagement in continuing medical education (CME).

Participant recruitment and data analysis

A purposive convenience sample of practicing surgeons and obstetricians was recruited for this pilot study during February and March 2024. Participants were included if they were currently practicing in their respective fields and excluded if they were medical students, interns, or practitioners from other specialties. Given the exploratory nature of this pilot study, the dataset was relatively small and manageable, allowing for manual data analysis using descriptive statistics in Microsoft Excel.

Ethical considerations

Participants were provided with information regarding the purpose of the study, the voluntary nature of participation, and their confidentiality rights, including the option to withdraw at any time without consequences.

Questionnaire validation

The validation of our questionnaire incorporated several steps to ensure its reliability and relevance. Content validity was established through consultations with experts from general surgery, obstetrics and gynecology, and family and community medicine. Pilot testing was conducted on a smaller scale to refine questions and format based on feedback, identifying ambiguities and necessary adjustments before a wider distribution. Additionally, face validity was reviewed by general surgeons and obstetricians to ensure the questionnaire effectively recorded the measurement.

Clinical trial registry

Not applicable.

Results

The survey included 39 medical practitioners from Saudi Arabia, with 56.41% ($n = 22$) obstetricians and 43.59% ($n = 17$) surgeons. The majority were consultants (46.15%, $n = 18$), followed by registrars/senior registrars (33.33%, $n = 13$), with 35.90% ($n = 14$) having 5–10 years of practice.

Groin hernia was the most frequently reported diagnosis for groin lumps during pregnancy (43.59%, $n = 17$), while only 7.69% ($n = 3$) identified RLV. Awareness of RLV as a differential diagnosis was low (35.90%, $n = 14$) [Figure 1], and only 25.64% ($n = 10$) were familiar with its management [Figure 2]. Notably, 30.8% ($n = 12$) relied solely on clinical examination without imaging [Figure 3].

Regarding clinical encounters, 38.46% ($n = 15$) had identified groin lumps during pregnancy, with 10.26% ($n = 4$) reporting surgical interventions for hernias. CME engagement varied, with 38.46% ($n = 15$) never participating in CME related to groin conditions.

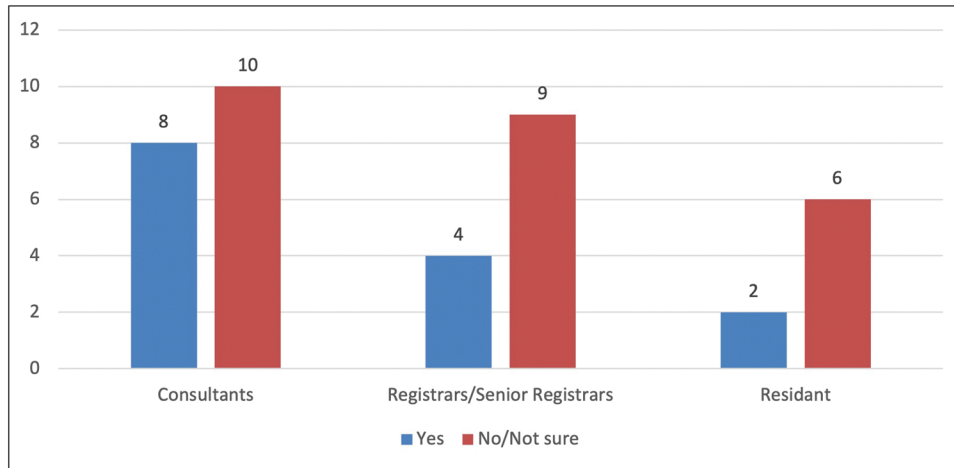


Figure 1: Awareness of round ligament varicosities as a common differential diagnosis for groin lumps during pregnancy among different professional ranks

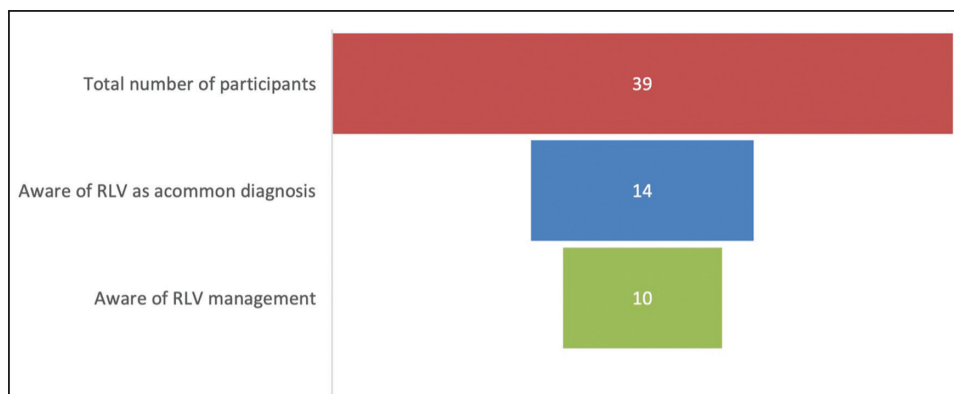


Figure 2: Awareness of the management for round ligament varicosities among participants

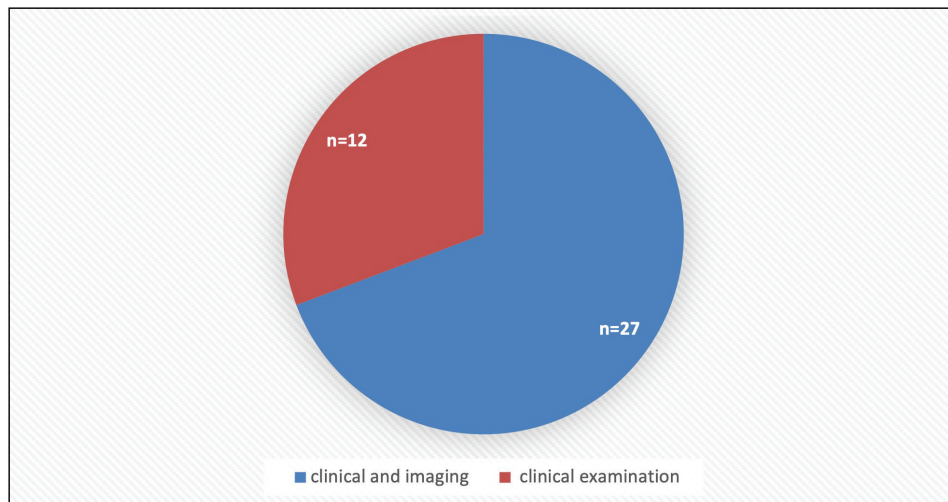


Figure 3: Diagnostic approaches chosen by participants for evaluating groin lumps during pregnancy

Discussion

Our pilot study revealed a significant gap in the awareness and management of RLV among healthcare professionals. Only 35.9% of participants recognized RLV as a differential diagnosis for groin

lumps during pregnancy, signaling the need for enhanced training. Furthermore, familiarity with management was even lower at 25.64%, indicating that practitioners are not adequately prepared to manage this condition, potentially leading to unnecessary interventions.

Notably, even senior practitioners, such as consultants, demonstrated limited awareness of RLV, suggesting that educational interventions should target professionals at all levels of experience. This lack of awareness could contribute to inappropriate management and delayed diagnosis, ultimately negatively affecting patient outcomes.

Groin hernia was the most frequent diagnosis, and RLV was seldom considered, which underscores the necessity for more comprehensive diagnostic protocols that include RLV. The finding that 30.8% of participants rely solely on clinical evaluation without imaging further highlights the risk of misdiagnosis, as RLV and hernias have similar presentation. Ultrasound or other imaging techniques are essential to distinguish between these conditions, thereby reducing unnecessary surgical interventions.

This study has several limitations, including a small sample size and the use of convenience sampling, which may not adequately represent remote regions where fewer educational resources and CME opportunities exist. Additionally, this pilot study did not assess construct validity due to the limited availability of previous studies on RLV awareness. However, these limitations were acceptable for refining the methodology in preparation for a larger-scale study. Future research should seek to address these limitations by ensuring more diverse sampling and improving the scope of the data collected.

The primary objective of this pilot study was to evaluate and refine the methodology for a larger-scale study. The findings highlight an urgent need for educational programs focused on RLV diagnosis and management. While the scope of the pilot study was limited, the results provide valuable insights for improving both training and clinical practice.

To address these gaps, several adjustments will be made to the research methods. The questionnaire will be refined by rewording ambiguous questions and improving the flow of responses to enhance data clarity. Recruitment strategies will be expanded to include a more representative sample from various clinical settings. Collaborations with medical institutions and professional networks will ensure a broader reach. Advanced data analysis tools, such as Statistical Package for the Social Sciences, will be employed to provide more detailed insights and minimize bias. These changes aim to increase the reliability of the results in the forthcoming study and allow for actionable recommendations to improve clinical protocols.

Conclusion

A significant gap in the awareness of RLV has been highlighted among healthcare professionals, particularly in the areas of differential diagnosis and management for pregnant patients presenting with groin lumps. Based on the preliminary findings of this pilot study, at least a sonographic evaluation is strongly recommended to ensure accurate diagnosis of RLV, as treatment decisions should not be based solely on clinical examination. Adjustments identified through this study will inform a comprehensive, larger-scale investigation designed to address these knowledge gaps and ultimately improve clinical outcomes for this patient group. Robust data and conclusive recommendations for clinical practice are expected to support more accurate diagnosis and management of RLV.

Author contributions

Zaid Malaibari: Concepts & Design, definition of intellectual content, data & statistical analysis; Razaz Aldemyati: Concepts & Design, data & statistical analysis; Reham H. Alrahil, Rahaf H. Alrahil, Salihah S. Alzubaidi: Definition of intellectual content, literature search, data acquisition; Shumoukh H. Alshehri, Ahmed T. Alghabban, Salman A. Alshamrani: literature search, manuscript preparation; All authors contributed to manuscript editing and manuscript review.

Ethical policy and institutional review board statement

Ethical approval for this study was obtained from the Institutional Review Board of the University of Tabuk on 15-2-2024, under approval number UT-337-180-2024. The study was performed in accordance with the Declaration of Helsinki.

Declaration of patient consent

Written informed consent was obtained from all participants for the anonymous use of data for publication and registry. A copy of the written consent is available for review upon request.

Data availability statement

The datasets generated during and/or analyzed during the current study are available from the corresponding author on reasonable request.

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Nil.

Conflicts of interest

There are no conflicts of interest.

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Not applicable.

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