Original Article

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Radiology Section

Demographic Profile and Findings of On-call Emergency Ultrasound: A Descriptive Study from Arunachal Pradesh, India

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ABSTRACT

Introduction: Ultrasonography (USG) serves as a crucial diagnostic tool in emergency settings, extending beyond the assessment of the acute abdomen to encompass a wide range of acute conditions involving both superficial and deep soft tissue components of the body.

Aim: To analyse the demographic profile and diagnostic findings associated with emergency USG requisitions at a tertiary care centre.

Materials and Methods: A retrospective observational descriptive study was conducted in the Department of Radiodiagnosis at Tomo Riba Institute of Health and Medical Sciences (TRIHMS), Naharlagun, Arunachal Pradesh, India. Data from all emergency on-call ultrasound cases performed at TRIHMS from June 18, 2022, to June 17, 2023, were collected from the ultrasound room. A total of 258 cases of emergency ultrasounds were conducted. The age, sex and findings of emergency USG were analysed. Results were expressed in terms of frequency and percentages.

Results: Among a total of 258 cases, 175 (67.8%) were females and 83 (32.2%) were males. The mean age of the participants was 29.02±11.03 years. The distribution pattern by age revealed that the most common age group was 21 to 30 years, encompassing a total of 106 patients (41.1%), with 84 females and 22 males. A total of 71 cases were registered for obstetrics and gynaecology conditions, constituting 27.5% of the total.

Conclusion: Although USG is requested for many emergency conditions in the hospital, the acute abdomen remains the foremost indication for an emergency USG call.

Keywords: Emergency medical practitioner, Intestinal obstruction, Retained product of conception, Ultrasonography

INTRODUCTION

The increasing integration of USG into emergency rooms has proven to be highly beneficial for Emergency Medical Practitioners (EMPs). This diagnostic tool allows EMPs to efficiently assess a variety of illnesses and clinical disorders, leading to quicker diagnosis and treatments. The utilisation of USG in emergency care contributes to an overall enhancement in the quality and efficiency of services offered in Emergency Departments (EDs) [1].

The USG, characterised by its affordability, portability and lack of radiation exposure to patients, stands out as an invaluable and dynamic diagnostic tool, making it the preferred imaging modality in ED. The widespread use of USG in emergency settings encompasses both traditional scans conducted by Radiology Departments and point-of-care scans performed by physicians at the patient's bedside [2].

The USG serves as a crucial diagnostic tool in emergency settings, extending beyond the assessment of the acute abdomen to encompass a wide range of acute conditions involving both superficial and deep soft-tissue components of the body. Its applications include localising foreign bodies and distinguishing between abscesses and haematomas in acute musculoskeletal or superficial lesions, among others [3,4]. Hence, the present study aimed to analyse the demographic profile and diagnostic findings associated with emergency USG requisitions at a tertiary care centre.

MATERIALS AND METHODS

A retrospective observational descriptive study was conducted at a tertiary care centre, Department of Radiodiagnosis, TRIHMS, in Naharlagun, Arunachal Pradesh, India, from June 2022 to June 2023.

Inclusion and Exclusion criteria: All emergency on-call ultrasound cases conducted at the institute, including those during non office hours such as at night and on holidays, were included in the study. All routinely performed cases were excluded from the study.

Study Procedure

Four radiologists, each with a minimum of three years of experience in the field, individually conducted the on-call ultrasounds. The machine used was the Samsung RS80A, equipped with convex, volumetric 3D/4D, linear and Transvaginal (TVS) probes, used as required.

The age, sex, indications and ultrasound findings were analysed. For ease of description, the findings were arbitrarily categorised based on the site of origin of the disease. For instance, all obstetrics and gynaecology cases, such as antenatal check-ups, ectopic pregnancies, Retained Products of Conception (RPOC), pelvic inflammatory disease and ovarian torsion, were grouped under the heading of obstetrics and gynaecology. Similarly, ascites, haemoperitoneum and pneumoperitoneum were grouped under the heading of peritoneal lesions; all intestinal cases, such as acute appendicitis, Intestinal Obstruction (IO) and hernias, were categorised under the heading of intestinal lesions.

STATISTICAL ANALYSIS

The data were categorised and presented in proportions. Descriptive statistics such as mean and median, were used to represent continuous variables, while frequency and percentages were used to represent categorical variables.

RESULTS

A total of 258 cases of emergency ultrasounds were conducted, involving 175 females (67.8%) and 83 males (32.2%). The ages of the patients ranged from one-day-old infants to 66-year-old individuals, with a mean age of 29.02±11.03 years and a median age of 28

years. The age distribution indicates that the most common age group was 21 to 30 years, encompassing a total of 106 patients (41.1%), including 84 females and 22 males [Table/Fig-1].

Age group (in years)	Gender n (%)		N (%)
	F	M	
0-10 (%)	5 (1.9)	4 (1.6)	9 (3.5)
11-20 (%)	30 (11.6)	16 (6.2)	46 (17.8)
21-30 (%)	84 (32.6)	22 (8.5)	106 (41.1)
31-40 (%)	43 (16.7)	22 (8.5)	65 (25.2)
41-50 (%)	11 (4.3)	13 (5.0)	24 (9.3)
51-60 (%)	1 (0.4)	5 (1.9)	6 (2.3)
>60 (%)	1 (0.4)	1 (0.4)	2 (0.8)
Total (%)	175 (67.8)	83 (32.2)	258 (100.0)

[Table/Fig-1]: Age and gender-wise distribution of the study participants.

A total of 71 cases were registered for obstetric and gynaecological conditions, constituting 27.5% of the total [Table/Fig-2,3]. The majority of these cases involved antenatal check-ups (33 cases), with ectopic pregnancy and RPOC categorised separately. Among the antenatal cases, there were instances (8 out of 33 cases) where mothers were unaware of their pregnancies, presenting with complaints such as abdominal pain or distension. Within the first trimester, there were eight antenatal check-ups, two of which involved anembryonic sacs and one with a missed abortion. Six cases of second-trimester antenatal check-ups were recorded, while the highest number, 19 cases, belonged to the third trimester, including instances of intrauterine foetal demise, oligohydramnios and placenta previa. The second most common reason for obstetric and gynaecological USG calls was for RPOC following intentional or unintentional abortions, accounting for 14 cases. A total of 13 cases of ectopic pregnancy were diagnosed, with seven on the right side and six on the left. {**Note that ruptured ectopic pregnancies (with haemoperitoneum) are also included in the peritoneal lesion category} [Table/Fig-2a]. Other diagnosis included nine cases of pelvic inflammatory disease. There was one case each of ovarian torsion and a haemorrhagic ovarian cyst.

Disease related to particular organ/system		Sex		Total
		Female (n=175)	Male (n=83)	
Obstetrics and Gynaecology	Number (%)	71 (27.5)	0	71 (27.5)
Intestine	Number (%)	11 (4.3)	11 (4.3)	22 (8.5)
Peritoneum	Number (%)	11 (4.3)	10 (3.5)	21 (8.1)
Gallbladder	Number (%)	10 (3.9)	8 (3.1)	18 (7.0)
Renal/Urinary	Number (%)	10 (3.8)	10 (3.8)	20 (7.7)
Liver	Number (%)	6 (2.3)	10 (3.5)	16 (6.2)
Musculoskeletal	Number (%)	2 (0.8)	2 (0.8)	4 (1.6)
Pancreas	Number (%)	0	2 (0.8)	2 (0.8)
Lung	Number (%)	6 (2.3)	1 (0.4)	7 (2.7)
Testis	Number (%)	0	4 (1.6)	4 (1.6)
Spleen	Number (%)	1 (0.4)	0	1 (0.4)
Normal findings	Number (%)	48 (18.6)	29 (11.2)	77 (29.8)

[Table/Fig-2a]: Disease related to particular organ/system.
(Percentage calculated from the total (n=258) patients); ** The organs/systems involved may be more than the actual number of patients because many lesions affecting two organ/systems are included separately for ease of description, for example, a case of liver laceration is entered twice, once in liver category and another in peritoneal category due to haemoperitoneum, likewise, ectopic rupture is entered twice once in obstetrics and gynaecology cases and once in peritoneal cases as well due to haemoperitoneum. So, the number of cases may be more than the actual number of patients

There were 22 intestinal-related lesions, with 11 males and 11 females. Acute appendicitis, with or without perforation, was the leading cause in this group (11 cases, 6 females and 5 males). The second most common intestinal-related cases were small or large bowel obstructions, with a total of seven cases (4 males and 3 females). Other intestinal-related cases included one case each of ascariasis (21-year-old male), left indirect inguinal hernia (49-year-old male), left femoral hernia (40-year-old female) and umbilical hernia (37-year-old female).

**Peritoneal-related cases numbered 21, with 11 females and 10 males [Table/Fig-2b]. Among females with peritoneal lesions, haemoperitoneum was predominant (7 out of 11), while among males with peritoneal lesions, four out of 10 were haemoperitoneum. Ruptured ectopic pregnancy was the most common cause of haemoperitoneum in females (5 out of 11), followed by injuries (one eight-year-old with a splenic injury) and hollow viscus perforation (one 38-year-old with hollow viscus perforation). The remaining peritoneal lesions in females (four out of 11) and most males with peritoneal lesions (six out of 10) were due to ascites resulting from liver or pancreatic disease.

Disease related to particular organ/system		Sex	
		Female (n=175)	Male (n=83)
Obstetrics and gynaecology	Number (%)	71 (40.5)	0
Intestine	Number (%)	11 (6.3)	11 (13.2)
Peritoneum	Number (%)	11 (6.3)	10 (12.0)
Gallbladder	Number (%)	10 (5.7)	8 (9.6)
Renal/Urinary	Number (%)	10 (5.7)	10 (12.0)
Liver	Number (%)	6 (3.4)	10 (12)
Musculoskeletal	Number (%)	2 (1.1)	2 (2.4)
Pancreas	Number (%)	0	2 (2.4)
Lung	Number (%)	6 (3.4)	1 (1.2)
Testis	Number (%)	0	4 (4.8)
Spleen	Number (%)	1 (0.5)	0
Normal findings	Number (%)	48 (27.4)	29 (34.9)

[Table/Fig-2b]: Disease related to particular organ/system.
{with percentage calculated from total females only (n=175) and total males only (n=83)}

Obstetrics and Gynaecology cases	n (%)
Antenatal check-ups	33 (46.4)
Retained Product of Conception (RPOC)	14 (19.7)
Ectopic pregnancy	13 (18.3)
Pelvic inflammatory disease	9 (12.6)
Ovarian torsion	1 (1.4)
Haemorrhagic ovarian cyst	1 (1.4)

[Table/Fig-3]: Obstetric and gynaecology cases (n=71).

A total of 20 renal/urinary-related cases were identified, comprising 10 males and 10 females. Hydronephrosis was observed in 12 cases, with seven males and five females affected. At the time of examination, the cause of hydronephrosis was identified in seven patients, including four with proximal ureteric calculi and three with ureterovesical junction calculi. In the remaining five cases, the cause of hydronephrosis was not identified at the time of examination, attributed to factors such as poor bowel preparation, large body habitus, or an untraceable location of the obstruction. Three cases of cystitis were noted in females and one in a male. Two cases of pyelonephritis were observed, one in a male and one in a female. Additionally, one case of parenchymal renal disease and one case of a urinary bladder mass were noted, one in a female and one in a male patient, respectively.

Gallbladder-related cases numbered 18, consisting of 10 females and eight males. Cholelithiasis with cholecystitis was found in five patients (three females and two males). One female with calculus cholecystitis also had choledocholithiasis. Cholelithiasis without evidence of cholecystitis was also found in five patients (three males and two females). The remaining gallbladder-related cases included gallbladder polyps in two females and gallbladder sludge in one male patient.

There were 16 cases of liver lesions, involving 10 males and 6 females. The majority of liver lesions were diagnosed as fatty liver (an incidental finding) in varying grades, with 5 males and 1 female affected. Four liver masses were identified, including one male with an evolving liver abscess and three known cases of hepatocellular carcinoma; these masses were distributed among two males and two females. Chronic liver disease (cirrhosis) was detected in four patients, comprising two males and two females. Additionally, a case of liver laceration was found in a 22-year-old male and hepatomegaly was identified in a 35-year-old female.

Pancreatic lesions included two cases of acute pancreatitis: one with ascites in a 50-year-old man and another with a pseudocyst in a 66-year-old man.

There were seven cases related to lung or pleural issues, with six females and one male. These cases involved right lower lobe consolidation in a two-month-old female, while the remaining six cases presented with pleural effusions, either unilateral or bilateral.

Musculoskeletal-related cases numbered four, with 2 males and 2 females. One male had a radial artery injury on the right-side and another male had bilateral lower limb oedema due to cellulitis. One female experienced deep vein thrombosis in the left lower limb following a caesarean section delivery, while another female had a wooden foreign body in her left thigh, accompanied by a femoral arterial pseudoaneurysm.

Testicular-related cases totaled four, with two cases each of acute epididymitis and torsion. Lastly, one case of splenic rupture following a road traffic accident was identified in an eight-year-old female.

DISCUSSION

Acute abdomen presents as a medical emergency characterised by sudden abdominal pain of recent onset, along with associated symptoms concentrated in the abdominal region. This term encompasses a spectrum of conditions, ranging from benign and self-limiting to those requiring urgent surgical intervention. Therefore, a careful and rational approach to evaluating the location of discomfort becomes pivotal in guiding subsequent investigations [4].

There are many different causes of acute abdomen, making it a medical emergency. Early identification and treatment of these causes can be aided by Point-of-Care Ultrasound (PoCUS). By combining the fundamental ultrasound procedures that are currently in use into a single acronym, the authors developed the ACUTE-ABDOMEN protocol to assist in the evaluation of acute abdominal pain using a systematic sonographic approach. The acronym ACUTE stands for abdominal aortic aneurysm, collapsed inferior vena cava, ulcer (perforated viscus), trauma (free fluid) and E for ectopic pregnancy. ABDOMEN stands for acute appendicitis, biliary tract disease, dilated bowel loop, obstructive uropathy, men's testicular torsion and women's ovarian torsion [5].

The present study revealed that acute abdomen emerged as the most common indication for USG calls in the ED, with a significant number of cases referred from the Department of Obstetrics and gynaecology, predominantly related to pregnancy and its complications. These cases often involved assessing the location and viability of the foetus in the womb, the adequacy of amniotic fluid, or the presence of retained products of conception in the uterus.

Kotlyar S and Moore CL conducted a similar study in Liberia and the results are comparable to the present study. Their study found that 80% of the enrolled patients were female and 20% were male, with an average age of 33 years (range: 0-84). Most of the patients were from the Department of Obstetrics and Gynaecology (57%) [3].

Jin BB et al., performed a retrospective analysis of the clinical data from patients who underwent emergency gynaecological ultrasounds at the First Affiliated Hospital of Guangxi Medical University in China [6]. They divided the patients into daytime and nighttime groups and compared the findings. They found that ectopic pregnancy was the most common cause for emergency ultrasounds at night (46.7%) compared to daytime (18.7%). The next most common finding was intrauterine pregnancy, accounting for 33.9% during the day compared to 11.4% at night. This finding is comparable to the present study, where we also found antenatal check-ups to be the most common cause of obstetric and gynaecological cases (47%).

Pregnant women frequently experience pelvic pain stemming from various potential causes, including obstetric, gynaecological, gastrointestinal, genitourinary and vascular disorders. Given the challenges in diagnosis due to physiological changes during pregnancy, ultrasound serves as a readily accessible, widely used and non ionising radiation-emitting first-line imaging tool. In situations where ultrasound results are inconclusive or negative, Magnetic Resonance Imaging (MRI) becomes the second-line imaging technique to identify the cause of the symptoms or disease [7].

According to estimates made by the Centres for Disease Control in the early 1990s, about 2% of pregnancies result in an ectopic pregnancy [8]. Lee R et al., found that a thorough clinical history, along with ultrasound, is critical for the early diagnosis of ectopic pregnancy to prevent further complications or the need for surgical management [9]. The incidence is much greater, ranging from 6% to 16%, among pregnant women who report to the ED with abdominal pain and/or vaginal bleeding [10].

Pelvic inflammatory disease is one of the main risk factors for ectopic pregnancy [11] and other high-risk variables include tubal surgery and a history of ectopic pregnancy. The presence of an intrauterine gestational sac with a yolk sac and/or embryo, along with normal adnexal structures on sonography, effectively rules out the likelihood of an ectopic pregnancy [9].

In a series reported by Mashiach R et al., which included 47 patients with surgically confirmed ovarian torsion, the most typical ultrasound findings were an enlarged ovary, ovarian oedema and free fluid in the pelvis [12]. Other studies that focused solely on the whirlpool sign found it to be present in 88-100% of patients with adnexal torsion [13,14].

Apart from obstetrics and gynaecology cases, the majority of acute abdominal cases in the present study were related to the pathology of abdominal solid organs or the gastrointestinal tract. Inflammatory causes such as appendicitis and cholecystitis were the most common contributors to acute abdomen among non gynaecologic cases.

Karamanakos SN et al., conducted a similar retrospective review of 540 patients with acute abdomen at the University Hospital of Patras, where laparoscopic surgery was performed. They found acute cholecystitis (45.9%) to be the most common indication, followed by acute appendicitis (42.4%) [15]. Intestinal Obstruction (IO) is estimated to affect 2-8% of patients who visit the ED, with 15% of these patients being admitted to the surgical unit [16].

Hagos M studied similar retrospective descriptive studies over two years in Ethiopia and found acute appendicitis to be the most common cause of acute abdomen in adults (53.2%), followed by small bowel obstruction (16%) [17]. Ashaolu BA et al., studied 150 adult patients who presented with non traumatic acute abdomen and underwent abdominal ultrasound imaging at a Nigerian tertiary healthcare facility. They found appendicitis (44%) to be the most common cause of non traumatic acute abdomen,

followed by ectopic pregnancy (22%), intestinal obstruction (8.7%) and renal abscess as the least common cause (0.8%). This study demonstrated that, when used carefully, ultrasound can detect non traumatic acute abdominal cases with relatively high sensitivity, specificity and diagnostic accuracy. Therefore, in situations where other advanced diagnostic modalities are unavailable, the benefits of ultrasound should be fully utilised [18].

Suri S et al., conducted a comparative study to assess the diagnostic efficacy of Computed Tomography (CT), ultrasound and conventional radiography for detecting IO. They found that for detecting IO, CT scan demonstrated good sensitivity (93%), specificity (100%) and accuracy (94%). Comparable sensitivity, specificity and accuracy for ultrasound were 83%, 100% and 84%, respectively, while for plain radiography, these values were 77%, 50% and 75%. CT was found to be highly accurate in diagnosing the level and cause of obstruction. However, ultrasound was also very specific (100%) for the diagnosis of intestinal obstruction [19].

An abdominal USG is the preferred initial test for detecting an acute liver abscess. It typically displays hyper- or hypoechoic lesions with sporadic septations or debris. A CT scan with contrast is slightly more sensitive than ultrasound. For both diagnostic and therapeutic purposes, the exact causative organism can be identified through needle aspiration, preferably under ultrasound guidance, after the ultrasound or CT scan has been performed [20].

In the ED, the use of USG extends beyond acute abdominal cases to include the evaluation of soft-tissue injuries, assessment of muscle and tendon status, localisation of foreign bodies and examination of vessels near the site of injury. It is also used to evaluate non traumatic vascular lesions such as deep vein thrombosis and testicular pathology. The application of ultrasound in these areas has become increasingly common in recent years [21]. With its utility in both early diagnosis and interventional procedures- such as in cases of abscesses or haematomas- musculoskeletal (MSK) ultrasound is proving to be increasingly valuable in the ED [22].

The primary benefit of emergency MSK ultrasound is the rapid assessment of symptoms at the bedside, utilising both static and dynamic evaluations. This can be helpful in diagnosing conditions affecting muscles, ligaments, tendons, bones and nerves, as well as issues related to the skin and subcutaneous tissues, including abscesses, cellulitis, haematomas and foreign bodies, as well as avulsions and traumatic tears [23].

In current study, authors detected only four MSK-related cases: one case of a lacerated wound in the left forearm flexor muscle with radial artery injury, cellulitis in both lower limbs, deep vein thrombosis in the left lower limb and a wooden foreign body in the left thigh causing a femoral arterial pseudoaneurysm.

The most prevalent type of soft-tissue infection is cellulitis, which is limited to the subcutaneous space. It is a clinical diagnosis and in addition to painful swelling and erythema in the affected area, individuals may also exhibit fever and leucocytosis [24]. The ultrasound findings of cellulitis are non specific; the changes observed on ultrasound are caused by oedema and inflammation in the skin as well as in the soft tissue.

The most typical finding is “cobblestoning,” which appears as fluid-filled spaces separating the striped morphology of the soft tissue from the fat. Other non specific appearances include oedema and increased echogenicity of the skin and soft tissue. Power or colour Doppler imaging reveals hyperemia in the affected regions [25].

An abscess is a collection of necrotic, infectious tissue containing bacteria, inflammatory exudate and polymorphonuclear leukocytes that occurs in the muscles or subcutaneous tissues [26]. Abscesses often exhibit a circular morphology; however, they can also be irregular or have a geographic shape. The echogenicity of USG results can range from hypoechoic to isoechoic or hyperechoic, with uneven wall thickness and typical posterior acoustic enhancement, depending on the maturity of the collection. Internal debris is frequently observed and in the case of anaerobic bacteria such as Clostridium perfringens, gas may also be present. Power or colour Doppler imaging reveals varying degrees of hyperemia in the surrounding tissues and the abscess wall [27].

A haematoma is a collection of blood in the muscles or soft tissue that develops after trauma, particularly in individuals who are on anticoagulant therapy. The ultrasound appearance of a haematoma varies depending on its age. Hyperacute and acute haematomas appear as anechoic or slightly hypoechoic lesions with distal acoustic enhancement, indicating the presence of liquid blood. Methemoglobin contributes to the complexity of subacute haematomas, suggesting the formation of blood clots. Due to the distinct haemoglobin products (ferritin and hemosiderin) and calcification, chronic haematomas may exhibit a solid structure with varying echogenicity or revert to anechoic (indicating liquefaction) [28].

Perforating wounds with residual foreign bodies rank among the most common causes of ED admissions. The literature has documented that 38% of retained entities were missed during the initial clinical and radiologic assessments [29].

Metal, glass and bamboo/wood splinters are the most frequently retained foreign bodies. Although radiographs can detect approximately 80% of foreign bodies, radiolucent types may go unnoticed, which is why USG assessment is crucial. Jacobson JA et al., conducted a study to assess the effectiveness of using USG to locate wooden foreign bodies implanted in cadaveric specimens. They found that for the detection of foreign bodies measuring 2.5 mm, the sensitivity and specificity were 86.7% and 96.7%, respectively. For the detection of foreign entities measuring 5.0 mm in length, the sensitivity and specificity were 93.3% and 96.7%, respectively. With a specificity of 96.7%, an accuracy of 92.3%, a positive predictive value of 98.0% and a negative predictive value of 83.0%, the overall sensitivity was 90.0%. They concluded that wooden foreign bodies up to 2.5 mm in length can be successfully located using USG. Since many foreign bodies are radiographically undetectable, USG is an excellent modality for evaluating radiolucent foreign bodies due to its availability and accuracy [30].

Morphologically, a USG scan provides an estimate of the volume of the testicles, as well as an evaluation of the echogenicity and any pathological characteristics of the left and right testes in relation to one another. The investigation should also involve looking for tumours, hydatids, haematomas, or enlarged epididymis to make a comprehensive differential diagnosis [31].

For testicular torsion, Doppler interrogation of the testicular vessels is of immense importance. For low flow velocities, the Pulse Repetition Frequency (PRF) should be kept low and to minimise artifacts, the gain should be adjusted to its maximum potential. Determining the Resistance Index (RI) of the testicular vessels is also necessary [32].

The strength of the present study lies in its focus on on-call emergency ultrasound cases. Understanding the various types of cases encountered in emergency ultrasounds can assist Emergency Medical Personnel (EMPs), sonologists, radiologists and any other healthcare professionals performing ultrasounds in the ED. This knowledge enables them to manage patients more efficiently and improve triage.

Furthermore, awareness of the different types of cases or diseases encountered in on-call emergency ultrasounds can be utilised to design training protocols and modules in hospitals and medical colleges. This would help train EMPs and upcoming radiology residents in the future.

Limitation(s)

There are several limitations in the present study. The data collected are primarily from the register of the Emergency

Ultrasound Department. Often, details of patient data are not properly maintained during rush hours in the ED, which increases the likelihood of data misrepresentation. Additionally, the study only concerns emergency ultrasound cases and does not include those performed during routine office hours. However, many emergency cases may actually present to the hospital during normal working hours, which further contributes to the potential misrepresentation of actual cases. Since ultrasound is an operator-dependent investigation, each radiologist responding to emergency USG calls may have their own opinions, leading to a high possibility of individual bias.

CONCLUSION(S)

The majority of on-call ultrasound cases originated from the Obstetrics and gynaecology department, primarily related to early or late pregnancy and its complications. Among the non gynaecologic cases, acute appendicitis, cholelithiasis and ureteric calculi emerged as the most common causes of acute abdomen. In addition to abdominopelvic cases, USG calls were also made to evaluate musculoskeletal injuries in trauma patients, focusing on assessing vascular patency, detecting foreign bodies and examining hernia content and viability, among other concerns. The multifaceted applications of USG in the ED underscore its significance in diverse clinical scenarios, contributing to comprehensive patient care.

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