Pattern Of Gynaecological Pelvic Ultrasound Findings among Women with Pelvic Pain in a Tertiary Hospital in Kano North Western Nigeria

Luntsi Geofery[1], Nwobi I.Chigozie[2], Yusuf F.A[3], Nkubli .F.Bobuin[4], Alhamdu.S Moi[5], Abubakar G. M[6], Suwaid M.A[7], Idris G[8].

[1,2,3,4,5,6] *Department of Medical Radiography, University of Maiduguri, Borno State.*
[7, 8] *Department of Radiology, Bayero University/Aminu Kano Teaching Hospital, Kano.*

Abstract:
Objectives: *The aim of this study was to determine the common Sonographic gynaecological pelvic ultrasound pattern among women and relate it to age groups commonly affected.*
Method: *A retrospective study was conducted, reviewing 1035 ultrasound patients' reports in Aminu Kano Teaching Hospital, Kano. Data collected was organized according to age group, indications, and ultrasound findings, and analyzed using SPSS Version 17.0 statistical software. Descriptive statistics like mean, standard deviation and percentages were calculated and tabulated for the study.*
Results: *The result from the study showed patients within the age group of 20-29 and 30-39 years had the highest representation with 31.5% (n=325), p=0.01 and 52.5% (n=542), p=0.01 respectively. However, as the age increases no significant result was noted. The mean age of the patients was 31.6 years, with standard deviation of 2.5.*
The study also showed pelvic inflammatory disease (PID) having the highest occurrence with 58.3 % (n=602), and 16.3% (n=165) of the patients had normal findings, while ovarian cancer was least with 0.3% (n=3).
Conclusion: *The study found pelvic inflammatory disease as the common finding while the least was cervical cancer and ovarian cancer. Lower abdominal pain was the common clinical indication and patients within the age group of 20-29and 30-39 years were mostly affected by lower abdominal pain.*
Keywords: *Pelvic pain, Transvaginal ultrasound, Trans-abdominal ultrasound, Pelvic sonography, Pattern.*

I. Introduction

Gynaecological or pelvic ultrasound scan involves the assessment of the female pelvic organs which include uterus and ovaries.

Pelvic pain is a common presentation in both primary and secondary health care settings and one of the most common reasons for referral to a gynecologist[1].

Gynecologic pelvic pain can be characterized as acute or chronic pelvic pain[2]. Acute gynecologic pain can result from infection, formation of cyst and tumor etc with its associated complications or torsion of a gynecologic structure[3]. Acute pelvic pain in women can be secondary to a variety of disorders which may be difficult to differentiate on clinical ground. This clinical conundrum is often solved by diagnostic imaging. Ultrasound is the primary imaging modality for the evaluation of suspected acute gynecologic diseases. It employs the use of high frequency sound waves that gets reflected after directing it through the tissue to via the use of computer algorithm. It is however distinctly operator dependent.[3] Ultrasound is the technique of choice for investigation of pelvic pain as it affords reliable diagnosis of a range of gynecologic conditions[1]. This is because it is readily available, non-invasive, portability, non-ionizing radiation is used and relatively low price compared with other cross sectional imaging techniques like computed tomography and magnetic resonance imaging[1]

Some common gynecologic causes of chronic pelvic pain includes; Pelvic inflammatory disease, uterine Fibroids, Ovarian cyst, pelvic congestion syndrome, dysmenorrhea, dyspareunia pelvic infection adenomyosis, ovarian cancer, and endometriosis to mention a few. Clinical findings include, purulent vaginal discharge, dysuria, itching, adnexal tenderness, dyspareunia, dysmenorrhea, and pyrexia among other[5].

This study aimed at determining the pattern of ultrasound findings among women with gynecologic pelvic pain at Aminu Kano Teaching Hospital (AKTH) Kano.

II. Methodology

A retrospective study was conducted in the Radiology Department of Aminu Kano Teaching Hospital in North Western Nigeria, reviewing one thousand and thirty two (1032) patients ultrasound record that

presented for gynecologic pelvic ultrasound scan retrieved from the ultrasound record book from January, 2011 to December, 2012. Ethical clearance was obtained from the research ethical committee of the institution. The information collected include: Patients age, clinical indication, and ultrasound findings. All patients were scanned using Mindray DC6 ultrasound machine in a supine position using trans-abdominal and transvaginal approaches with 3-3.5 and 5-7.5MHZ probes respectively. Data obtained was tabulated according to age, indications and ultrasound findings. Descriptive statistics was employed in analyzing the data using Statistical package for social sciences (SPSS) version 16.0 software where the mean, percentages and the standard deviation were obtained.

III.   Result

A total of 1032 records of patients who underwent gynecologic ultrasound scan in AKTH were reviewed, with age range of 10 to 60 years, and a mean age of 31.6 years and standard deviation of 2.5 (25years).

The result shows that patients within the age group of 30-39 years and 20-29 years had the highest frequency with 52.5% (n=542), and 31.5% (n=325) respectively. While those within the age group of 50-59 years were least with 3.5% (n=36). (Table 4.1)

The result of the study also showed that the various clinical indications for which the various investigations were requested. Lower abdominal pain had the highest frequency with 21.9%, (n=226) while the least occurrence was dyspareunia with 0.8%, (n=8) (Figure 4.1).

The findings showed that pelvic inflammatory disease, uterine fibroids, ovarian cyst, adnexal cyst, ovarian cyst and ovarian cancer, were the common findings of the study. About 16.3%, (n=168) had normal findings, while pelvic inflammatory disease (PID) had the highest positive findings with 58.3%, (n=602) followed by uterine Fibroid with 13%, (n=135) while cervical cancer 1.5% (n=15) and ovarian cancer 0.3% (n=3) had the least incidence (table 4.2).

The result also shows a cross tabulation of ultrasound findings against the age of the patients. It revealed that pelvic inflammatory disease had the highest occurrence 58.3% (n=602) with the highest prevalence among the age group 20-29 (20.3%) and the least among the age group 50-59 (2.0%). The least finding is ovarian cancer with only three finding one in the age group 30-39(0.1%), 40-49(0.1%) and 50-59(0.1%). The age group 30-39 had the overall occurrence of the total findings 52.5% (n=542) while the least occurrence is among the age group 50-59(3.5%).

Table 1: Age group distribution of patients and percentage

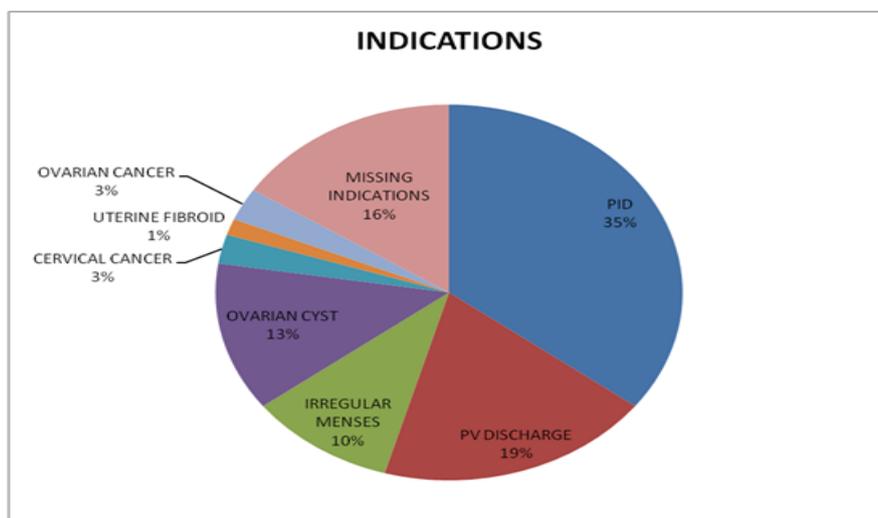| AGE GROUP	FREQUENCIES	PERCENTAGES
10-19	56	5.4%
20-29	325	31.5%
30-39	542	52.5%
40-49	73	7.1%
50-59	36	3.5%
Total	1032	100.0%

Figure 1: Various patients' presenting complains

Table 2: Various Ultrasound findings

ULTRASOUND FINDINGS	FREQUENCIES	PERCENTAGES (%)
Pelvic inflammatory disease	602	58.3%
uterine fibroids	135	13.1%
ovarian cyst	62	6.0%
adnexal cyst	47	4.6%
cervical cancer	15	1.5%
ovarian cancer	3	0.3%
Normal study	168	16.2%
Total	1032	100%

Table 3: Cross tabulation of Ultrasound Findings against Age Distribution

Findings	age distribution of Patients					
	10-19%	20-29%	30-39%	40-49%	50-59%	Total%
Pelvic inflammatory disease	42(4.1)	210(20.3)	286(27.7)	43(4.2)	21(2.0)	602(58.3)
uterine fibroids	3(0.3)	23(2.2)	99(9.6)	8(0.8)	2(0.2)	135(13.1)
ovarian cyst	5(0.5)	11(1.1)	36(3.5)	6(0.6)	4(0.4)	62(6.0)
adnexal cyst	1(0.1)	14(1.4)	23(2.3)	7(0.7)	2(0.2)	47(4.6)
cervical cancer	0(0)	0(0)	7(0.7)	4(0.4)	4(0.4)	15(1.5)
ovarian cancer	0(0)	0(0)	1(0.1)	1(0.1)	1(0.1)	3(0.3)
normal study	5(0.5)	67(6.5)	90(8.7)	4(0.4)	2(0.2)	168(16.3)
Total	56(5.4)	325(31.5)	542(52.5)	73(7.1)	36(3.5)	1032(100)

IV. Discussion

A total of 1035 patients record were reviewed with age range from10-60years, with a mean age of 31.6 years. The result from the study showed patients within the age group 30-39 years had the highest frequency with 52.5% (n=542), followed by patients within the age group of 20-29 years had 31.5% (n=325). This could be due to hyper activity of hormonal secretion by the patient in this age group. This agrees with a study by Njoku et. al[6] in south eastern Nigeria who reported a high prevalence of disease among younger women (25-30 years). Pitts, et al[7], conducted a study on identifying the prevalence and correlation of three types of pelvic pain (dysmenorrhea, dyspareunia and other chronic pelvic pain) in Australian women, and found that out of 1983 women with aged range of 16-49 years who were still menstruating and sexually active, the analyzed prevalence were 71.7% for dysmenorrhea, 14% for dyspareunia and 21.5% for other chronic pelvic pain (CPP). They concluded that the rate of pelvic pain in Australian women was high. Care givers needed to be ready to discuss these issues with patients, particularly in relation to underlying anxiety and depression especially with the younger ones.

The result also showed pelvic inflammatory disease (PID) having the highest occurrence with 58.3 %,(n=602). This is similar to a work by Njoku et al[6] who found 49.5%, (n = 52) out of 105 diagnosed cases of PID. This could be because PID is easily transmissible and caused by a variety of organisms and it is commonly transmitted by sexual intercourse and easily transmissible via toilets or sharing of under wear.

The result also showed that 16.3%, (n=165) of the patients had normal findings. Although this does not totally rule out the infection, because most of the early stages of these diseases may not be well appreciated on ultrasound. This result presents similar findings to that of Gourisankar et al[8], who had normal findings in 26 out of 100 patients.

About 13%, (n=135) of the patients had uterine fibroid, and 6%, had adnexal cyst. This is similar to a study conducted by Aflatoonian et al[8] and Ismail[9] who reported that the prevalence of uterine fibroid varies significantly with race. They found that African-American women had 18%, the Hispanic women with 10% and 1% in the white women.

They also found 82 women of reproductive age were found to have ovarian cyst.

V. Conclusion

The distribution of pattern of findings in this study has shown that pelvic inflammatory disease, uterine fibroids, ovarian cyst, adnexal cyst and ovarian cancer, were the common findings of the study. Pelvic pain is a medical condition that interferes with daily activities, it is the leading cause of recurrent short term school absence in adolescent girls and a common problem in women of reproductive age. Pelvic inflammatory disease had the highest prevalence, while cervical cancer and ovarian cancer were least. Lower abdominal pain was the common clinical indication for which investigations was requested and patients within the age groups of 20-29 and 30-39 years were mostly affected.

References

[1]. Okaro E, Valentin L. The Role of ultrasound in the management of women with Acute and chronic pelvic pain: Best practices And Research Clinical obstetrics And Gynecology. 2004;18:105-123. Karnath BM, Breitkopf DM .Acute and Chronic Pelvic Pain in Women. 2007, 41-48. Available at http://www.turner.white.com.pp. [Accessed on 15 Nov, 2012].

[2]. Singh A. Acute pelvic pain dealing with challenge. Department of Emergency Medicine, California: Alameda Medical Centre. 2010 Williams LL, Ozaksit G, Caglar T, Zorlu CG, Chronic Pelvic Pain in Adolescent Women Diagnostic Laparoscopy and Ultrasonography. Journal of Reproductive Biology. 2004;216:440-443.

[3]. Kristina S, Caroline vv And Aino F. Clinical Diagnosis of Pelvic inflammatory Disease. Bnic women's Health. 2006; 6;16. Available at http://www.Biomedicalcentral.com. [Accessed on 15 Nov, 2012].

[4]. Njoku J,Mishell DR, Grimes DA, Kooning PP, The value of TAS in the Diagnosis And Management of PID: Nigerian Journal of Medical Imaging And Radiotherapy. 2007;1:24-29.

[5]. Pitts M K, Bulas DI, Ahlstrom PA. Prevalence and correlation of Three Types of Pelvic pain in a National Representative Sample of Australian Women; Medical Journal of Australia. 2008;189:138-143.

[6]. Gourisankar K,Mukherji J, Gayen A. Different method for Evaluation of Chronic Pelvic pain: Indian Journal of Obstetrics and Gynecology. 2005;55:251-253

[7]. Aflatoonian A, Aflatoonian R, Khashavi Z. Comparison between Transvaginal sonography And Cytological Results for Detection of Ovarian Cysts: Iranian Journal of Reproductive Medicine. 2003;1:16-19.

[8]. Ismail S. An Evaluation of the incidence of Right Sided ovarian cystic Teratoma visualized on sonograms: Journal of Diagnostic Medical Sonography. 2005; 21: 227.