Endometrioma: A Concern for fertility

Baral J, Acharya P, Rana A and Gurung G

Dept of Gynaecology and Obstetrics, TU Teaching Hospital, Kathmandu, Nepal

Abstract

Introduction: Endometriosis is a complex disease of young women in reproductive age, responsible for endometriosis-associated pelvic pain (EAPP) because of the deeply infiltrating endometriosis (DIE). There has been significant successful revolution in the diagnosis and the management both surgical and medical where medical treatment both pre and post-operatively has been documented as gain for pain relieve and fertility promotion.

Methods: Retrospective study was done for a period of 4 years, April 2009- 2013 in Department of Gynecology and Obstetrics, TU Teaching Hospital using Operation Register obtainingfiles from Medical Record Section. All the cases exposed to operative management for endometrioma were noted for size, adhesion and associationwith other gynecological condition and type of surgical approach for future fertility preservation.

Results: There were 77 cases of chocolate cyst, representing 3.2% of major gynecological surgery, in age up to 30 years being 21(27%) as compared to those above the age of 30. Adhesion were omnipresent in all cases [mild 20 (26%) and dense adhesion in 57 (74 %).Irrespective of the size of chocolate cyst; 3-5cm (27); >5-10cm (40); 10-15cm (9) and 15-20cm (1);associatedwas myoma in 14(18%). Confined to36% infertility were total 28[Primary infertility (14); Secondary infertility (14)]. Adhesion was dense in all cases of primary infertility and 12/14 cases of secondary infertility, yet forward anticipation in primary (9) andcases of and secondary (6) infertility cases [after deducting, 13: hysterectomy (11) and bilateral ovarian removal (2)] along with 8/9 cases in unmarried [excepting, hysterectomy (1)] but may not be rewarding in cent percent..

Conclusion: Endometrioma noted to create adhesion in one and all case, expected to enhance on operative exposure, need coverage by favorable medication before and after semiconservative surgical approach to overcome associated adverse fertility prognosis

Keywords: Chocolate cyst, dense adhesion, endometrioma and fertility

Introduction

Endometriosis is a complex disease of young women in reproductive age, responsible for endometriosis-associated pelvic pain (EAPP) because of the deeply infiltrating endometriosis (DIE). Dysmenorrhea, dyspareunia (pelvic pain at intercourse), dyschezia (pelvic pain with defecation), dysuria and the chronic pelvic pain can be scored on a visual analog scale (VAS).[1-8]

Chocolate cyst of ovary, endometriosis of the ovaryor endometriomais a benign condition, but when pain is concerned has manifestations as that malignancy.

Seen in reproductive age group, it is fairly seen to affect young adolescent, having single status or nullipara or parous women exhibiting thecondition.

There has been significant successful revolution in the diagnosis and the management both surgical and medical where medical treatment both pre and post-operatively has been documented as gain for pain relieve and fertility promotion.

Although the condition were prevalent in westerners, may be because of the diagnostic availability has been recognized amongst Asians now.

Methods

Retrospective study was done from the year Baisakh 2066-2069 Chaitra (April 2009- 2013) for a period of 4 years in Department of Gynaecology and Obstetrics, T.U Teaching Hospital. Data Source taken from Operation Register and charts availed from Medical Record Section. Information's were collected, compiled and entered in the computer and analyzed for age parity, laparotomy findings, size of endometrioma, association of other gynecological condition and type of surgery, conservative (unilateral salphingo-oophorectomy) or radical (total abdominal hysterectomy)with adhesioysis.

Results

There were total 77 cases of endometrioma recorded in four years period from April 2009- 2013 (2066-2069), with yearly 19.2 cases,representing % of major surgery.

Women as young as 17 and as old as 46 years were seen to be affected, age groups being [≤19(1); 20-30 (20), 31-40 (35); 41-50(21)].

In Parity (P): {nullipara 27[unmarried (9); nullipara 18 [P0 (14); P0+A1 (4); abortion]}; P1: 19 {[P1 (18); P1+A1 (1)]}; P2:25[P2 (17); P2+A1 (8)]; ≥P3 (6)

Pain was the presenting features in all the cases. Pain was so severe that emergency laparotomy was undertaken in 2 cases, one was in a 20 year old unmarried and other was a 42 year old P4L2 with bilateral ovarian involvement requiring TAH&BSO.

Unilateral involvement was observed in 50(65%) and bilaterality in 37 (35 %).

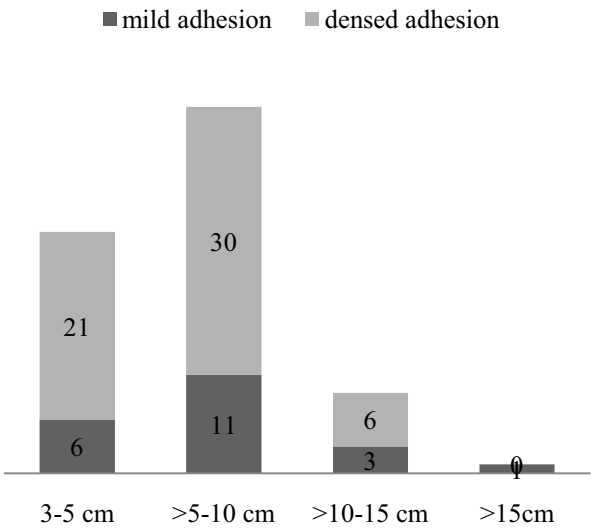

Figure 1: Size distribution of adhesion

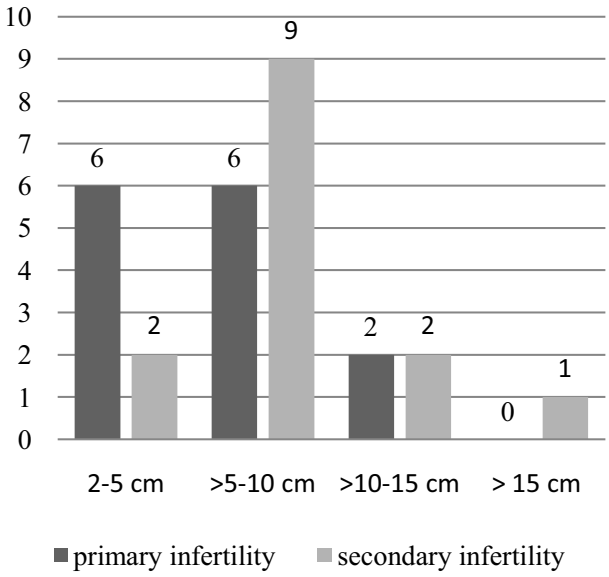

Figure 2: size distribution of chocolate cyst associated with infertility

Adhesion were seen in all the cases irrespective of the size of chocolate cyst that varied {3-5cm (27);>5-10cm (40); 10-15cm (9) and15-20cm (1)[fig 1,2].}

Mild adhesions were seen in 19/77[6/27(3-5cm); 10/40(5-10cm); 3/9(10-15cm)].

Severe adhesions were seen in the rest 58/77 [21/27(3-5cm); 30/40 (5-10cm); 6/9(10-15cm) and 1(15-20cm)] indicating, mild adhesion in lesser number of cases 19 (%) than and dense adhesion seen in 58 (%).

These adhesions were found between uterus, ovaries, tubes, large intestines, appendix, pouch of Douglas, uterosacral ligaments to such an extent creating plastered pelvic peritoneum making the dissection less possible necessitating surgical help in three cases. Adhesion was witnessed to take longer operating time and more blood loss.

Prospect of fertility

Out total 77 cases, 50% (28) admitted their fertility problem nine being excluded on account of single or unmarried status not worrisome for fertility matters currently.

Presentation was infertility in 28(36%): [primary (n=14); secondary14: P0A1 (4) +P1 (10).].

Adhesion was dense in all cases of primary infertility and 12/14 [85%] cases of secondary infertility and is partly explained by the disease confinement (chocolate cyst) to one or both ovaries (Fig 1,2).Size of the chocolate ranged from 2 cm 15-20 cm.

Table 1: Infertility and endometrioma in yearly presentation

Yr	No	inf	total	Age in yrs	TREATMENT					FIBROID
					Lap	Enucleation	USO	BSO	TAHBSO	
2066	**13**	**4**	**Pr inf [2]**	**46,25**			1		1	
			Sec inf [2]	40,32			1		1	
2067	**25**	12	Pr inf [4]	25x(2),27,35	1	1	1		**1[F]**	**1**
			Sec inf [8]	20,32,33(2),34,40,42,45	1	1	2		4 [FX2]	2
2068	**23**	**6**	**Pr inf [5]**	**36,38,44,45(2)**			2		**3]F1]**	**1**
			Sec inf [1]	40					1 [F1]	1
2069	**26**	**6**	**Pr inf [3]**	28,31,34		2	1			
			Sec inf [3]	30,35,37			2	1		
Total	**77**	**28**	Pr [14]	Mean age prinf**33**	**2**	**4**	**10**	**1**	**11**	5
			sec [14]	Mean age sec inf 35						

Table 2: Prospects of fertility in endometrioma

		Age in yrs	MANAGEMENT					FIBROID
			Lap	Enucleation	USO	BSO	TAHBSO	
Unmarried nulligravida (9)		17			1			
		20, 21 (4), 25,26		5	2			
		41					1	
married nulligrvaida Pr inf / (14)		25(3), 27, 28,	1	1	3			
		31,34,35,36,38,		2	2		1	1
		44,45(2),46					4	1
Sec inf (14)	P0 + A1	33	1					
	Abortion (4)	40(2), 45		1(BL) *			2	2
	P1+0 (10)	30 (2),32(2),33,34,35,37			5	1	2	
	All (live issue)	40, 42			-		2	1
Total			2	9			12	5

Table 3: Unmarried status and endometrioma

Year	age	OVARY in cms		ENUCLEATION/ CYSTECTOMY	USO	TAHBSO	ADHESION	
		Rt	Lt				MILD	DENSE
2066	21	6X6	N	√				POD /Rectum
	25	8X8	-		√			Ut/FT / POD Rectum
	26		8X8		√			Uterus appendages intestine
2067	21	10X10	15X15	√				Omentum /rectum
2068	21	8x8	N	√			MILD	-
	41	5x4				√		POD/Large intestine , POD
2069	17	6X6						Appendix/Large intestine
	20	10X6		√				FT /POD/ Rectum /Peritoneum
	21	6x6	6x6	√				Kissing ovary
				5	2	1		

Example of dense pelvic adhesions were seen two cases of secondary infertility, where plastered field did not permit the entry in to the field, let alone the allowance toproper clearance of adhesion to such an extent that even the removal of uterus itself was realized difficult to accomplish and hadto be left behind in women aged 35 and 45 after removing both the ovaries with and without fallopian tubes (table 2) . In one case only little portion of the uterine fundus was visible, pathology obscuring the whole anatomy of the pelvis making only bilateral salphingo-oophorectomy feasible

Prospect of fertility is observed to have guarded prognosis, because of hysterectomy, a form of surgical treatment offered to total 12 women {[unmarried: 1/9 (11%) ; Primary infertility : 5/14 (35%) and secondary infertility 6/14 (42%)] for chocolate cyst and closely associated myomas [in nullipara (o); 2/6 primary infertility and 3/6 secondary infertility (Table 1. 2).] } that left behind 25/77 (32%) demanding fertility preservation.

But could be yearned for in only in 18 cases [unamrried(8), primary infertility (9) and secondary infertility PO with previous abortion A1 (1)], or being a little considerate in additional 5 cases of secondary infertility P1who has undergone unilateral salphingo-oophorectomy

In, 14 primary infertility cases, age ranged (25-45) with age groups of 25-29(5); 30-34(2); 35-39(3); 40-44 (1);45-49(3). They all were nulligravida and unfortunately 5 of them undergone hysterectomy for endometriosis and associated fibroid in two.

In 14 secondary infertility cases with the age range(30-45) l within age group 25-29(1); 30-34(6); 35-39(2); 40-44 (4); 45-49(1)]only four cases were nullipara having had one abortion and ten cases who exactly were primipara. Unfortunate enough, six of the cases had already undergone hysterectomy.(Table1, 2)

Discussion

The study showed, endometrioma represented 3.2 % of total major surgery, with at least 19-20 endometriomas being operated per anum either for pain, infertility or both, sometimes in emergency basis.

Endometriosis is associate for infertility and this may related to formation of adhesions [mild [(filmy thickness, avascular, easily separated adhesions); moderate adhesions (less than a half of ovary remains adjacent to dense thickness adhesions which is difficult to separate, or above a half of ovary remains adjacent to filmy thickness adhesions) and severe adhesions (above a half of ovary is adjacent to dense thickness, well vascularized adhesions which is difficult to separate, involving the other pelvic organs, observed angiogenesis)].[4,9-12]

Adhesion is believed to mechanically induce infertility through its coexistence with endometriosis. Extent of ovarianendometrioma determinesdetrimental ovarian reserve. Exposure to surgerymay even be worse, cited to have more deleterious effect on ovarian reserve.[6-12] These are ovulatory dysfunction, luteal phase problems,

impaired folliculogenesis, reduce response of the ovaries to gonadotrophins, quality of the oocytes retrieved, abnormal immunological peritoneal environment, defective implantation and decrease embryo quality as shown by higher cancellation rates in IVF cycles. Besides, a higher risk of premature ovarian failure, earlier age at menopauseare also ascribed to severe injury to the ovarian reserve. Endometriosis-associated infertility necessitates surgery for pelvic pain alleviation or to overcome difficult access to growing follicles and can be sought out by superovulation, intrauterine insemination and IVF.[13-14]

However, surgery is one of the therapeutic options commonly practiced even today in our set up for dealing endometrioma of bigger sizes. For others laparoscopic excision is the 'gold standard' to improve fertility. [15-16]Excision/stripping and the vaporization/coagulation, combined excisional-vaporization technique or by replacing diathermy coagulation with surgical ovarian suture techniques are in vogue, associated with better follicular reserve, higher pregnancy rate and a lower rate of recurrence. Recurrence is feared to adversely affect ovarian damage and fertility from post-surgical adhesions. Absorbable adhesion barrier agents like interceed, oxiplex/viscoelastic AP gel and 4% icodextrin (Adept) solution usage enacts to lower but not fully eliminate the adhesion.[12]

Initial circular excisional cystectomies aided by the use of mesna add to glory. Laparoscopic cystectomy as three-stage procedure however is said to offer better ovarian volumes, vascularization or functional ovarian tissue as determined by antral follicle count (AFC) demonstrated in Transvaginal color Doppler ultrasonography.[15-16]

Surgery for pain was undertaken in all the 77 cases annoyingly confronted by adhesions, a nuisance difficult to combat. Laparoscopy being in the infantile stage was barely advocated. Although skeptical of fertility outcome yet at advantages could be younger nulligravidas and nullipara under thirties with intact one or both ovaries in the absence of adhesions.

Post-operative adhesion formations are likely to be minimized by adoption of adhesion reducing technicalities keeping futuristic fertility goal in place. While preoperative medications oblige by making the field easier to dissect. Pregnancy soon after surgery has a protective effect against recurrence. The effect of conservative surgery at laparoscopy has been compared with treatment with a low-dose of norethisterone acetate (2.5 mg/day) in women with persistent/recurrent severe deep dyspareunia after first-line surgery.LA dienogest (DNG) with leuprolide acetate (LA), oral contraceptives (OC), progestin like levonorgestrel-releasing intrauterine system (LNG-IUS) and a combination of gonadotropin releasing hormone (GnRH) analogue and OC and GnRHa given pre- postoperative are alleged to have therapeutic benefits.[17-21]

Brushing through this literature, optimistic attempt at fertility preservation can be contemplated carefully, age being at positive side, of Nepalese women.

Conclusion

Endometrioma associated to dense adhesion related deep seated pelvic pain summoned to surgical exposure and hysterectomy have reduced prospect for fertility which to some extent can be overcome by suitable medication pre and post operation.

Conflict of interest: None declared.

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