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Analysing “Dr Sachin's criteria” for Adnexal Torsion Management & its Variable

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Abstract

Introduction Adnexal torsion is 5th most common gynaecological emergency occurring in about 2 - 15% of reproductive age group women, wherein both ovary and fallopian tube twist along the vascular pedicle which causes obstruction to venous outflow and arterial inflow.

Dr Sachin's criteria for adnexal torsion management

1. If adnexal torsion + ovarian cyst = / > 5cm do ovarian cystectomy.
2. Measure utero-ovarian ligament length if it is = / > 5cm do ligament plication.
3. In cases of torsion in pre-menarcheal girls & case of recurrent torsion do utero-ovarian ligament plication using hot dog in bun technique.
4. If Pcod is the cause of torsion then do detorsion + Pcod drilling + utero-ovarian ligament plication if it is >5cm + use medical ovarian suppression for 6 month.

Aim of study

- To find out age incidence for adnexal torsion cases and to compare it with other similar studies
- To analyse & compare different management modalities being used for adnexal torsion management.
- To analyse the side specific occurrence of adnexal torsion and to compare it with other studies.

- To find out & compare the incidence of Salpingo-Oophorectomy among adnexal torsion cases.
- To find out the correlation of size of ovarian cyst and adnexal torsion.

Materials and method

44 patients who underwent laparoscopy for adnexal torsion & managed following “Dr Sachin's criteria for adnexal torsion management” were studied & followed up prospectively for a period of 7 years from 2017-2024. Variables studied were age group of patients, parity, marital status, previous surgery, correlation of ovarian cyst size and torsion, incidence of torsion in pre-menarche girls and management options.

Conclusion

At present there are no definite guidelines for adnexal torsion management and so different available surgical options are being used by different operating surgeons worldwide & there is no standardisation of management protocols at present so this criterion is an attempt to standardise the the management protocol & bring in the uniformity in management of adnexal torsion cases so these patients can be benefitted worldwide.

Keywords: Adnexal Torsion, Dr. Sachin's Criteria, Utero-Ovarian Length Measurement

Introduction

Adnexal torsion is 5th most common gynaecological emergency occurring in about 2 - 15% of reproductive age group women, wherein both ovary and fallopian tube twist along the vascular pedicle which causes obstruction to venous outflow and arterial inflow^[1, 2]. Clinical presentation of adnexal torsion is highly variable and physical examination is often inconclusive. early definitive diagnosis by laparoscopy diagnosis increases the chances of saving the ovary and preventing life threatening complications such as thrombophlebitis and peritonitis^[3]. Ovarian torsion occurs when ovarian mass twists on its vascular pedicle. Torsion of every is rare but it is an emergency condition occurring in about 2-15% of patients. Torsion is most common in reproductive age women. Adnexal torsion most likely to occur when there is some problem in adnexa such as ovarian cyst, pregnancy Polycystic ovarian disease, hormonal changes due to ovulation induction and in some cases torsion may occur in normal size ovaries as may occur in children due to small size of uterus. Of all cases of adnexal torsion 10-20% cases occurs during pregnancy and most of these cases found at around 10-17 weeks of gestation. management of adnexal

torsion is same in pregnant patient and laparoscopic surgery is found to be safe in pregnant women [4, 5]. Torsion can present as intermittent pain or complete torsion of pedicle present as sudden severe unilateral abdominal pain. It is been noted that in more than 80% of patients torsion is associated with ovarian cyst more than 5cm in size or engaged ovaries due to ovulation induction as multi-follicular growth is more amenable to torsion. In adnexal torsion there is obstruction to venous outflow and arterial inflow causing ischemia and oedema.

Pathophysiology

Torsion occurs when ovary twists on its vascular pedicle causing obstruction to venous outflow and artery inflow as congestion and oedema sets in it will decrease the arterial blood flow to the point of causing necrosis depending upon the time elapsed between torsion, this may sometimes lead to necrosis, infection and haemorrhage and rarely peritonitis. right sided torsion is more common due to more space on right side.

Causes

Ovarian torsion most likely to occur when there is some problem in every such as ovarian cysts causing enlargement, pregnancy hyperaemia, ovulation induction for *in vitro* fertilisation treatments. 10-20% cases of adnexal torsion occurs during pregnancy and most other cases present during 10-17 weeks of pregnancy.

- Ovarian cysts usually more than 5cm
- pregnancy
- Ovulation induction drugs & OHSS.
- Polycystic ovaries
- Long utero ovarian ligament
- Assisted reproductive technologies.

Symptoms

- Sudden severe unilateral abdominal and pelvic pain
- Nausea
- Vomiting
- Fever
- Abnormal uterine bleeding.

Differential diagnosis

- Appendicitis
- Pelvic inflammatory disease
- Renal stones
- Gastro enteritis
- Urinary tract infection.
- Ectopic pregnancy
- Tubo ovarian abscess.

Diagnosis

Adnexal torsion is difficult to diagnose due to vague clinical symptoms and laboratory findings so it is important to keep this as a differential diagnosis in case of reproductive age group women. High index of suspicion is required to accurately diagnose this condition. When patient is having symptoms of severe unilateral sharp type of pain associated with nausea and vomiting it is always better to consult a gynaecologist and investigations need to be carried out to diagnose the cause of pain. Common investigations to be done are

- Complete blood count
- Serum bhcg

- Ultrasound
- Colour doppler to assess the blood flow to ovary.
- MRI
- Diagnostic laparoscopy.

Finding at sonography that raises the suspicion of torsion are ovarian oedema, enlargement of ovaries, and Whirlpool sign that may be seen in cross section due to abnormal blood supply this sign has more specificity for torsion diagnosis. on colour doppler study there is either decreased or absent doppler flow in twisted ovaries which gives an appearance of “Whirlpool sign” which is highly sensitive for diagnosis of adnexal torsion [6]. Role of CT scan and MRI is more to rule out the other causes of abdominal pain it is definitively diagnosed by laparoscopy.

Management

At present there are no definite guidelines for surgical management of adnexal torsion presently various treatment modalities used are detorsion, cystectomy, utero ovarian ligament plication, salpingo oophorectomy but due to no specific guideline available treatment varies from surgeon to surgeon and centre to centre so to standardise the treatment protocol Dr Sachin's criteria is introduced in 2016 and since then operated 44 patients with adnexal torsion and followed them prospectively till 2024. by using this criteria variability in the management of adnexal torsion can be prevented, results and long term follow up can be kept due to uniform management protocols and recurrence rate can be prevented and if any can be compared.

Dr Sachin's criteria for adnexal torsion management

1. If adnexal torsion + ovarian cyst = / > 5cm do ovarian cystectomy.
2. Measure utero-ovarian ligament length if it is = / > 5cm do ligament plication.
3. In cases of torsion in pre-menarcheal girls & case of recurrent torsion do utero-ovarian ligament plication using hot dog in bun technique.
4. If Pcod is the cause of torsion then do detorsion + Pcod drilling + utero-ovarian ligament plication if it is >5cm + use medical ovarian suppression for 6 months.

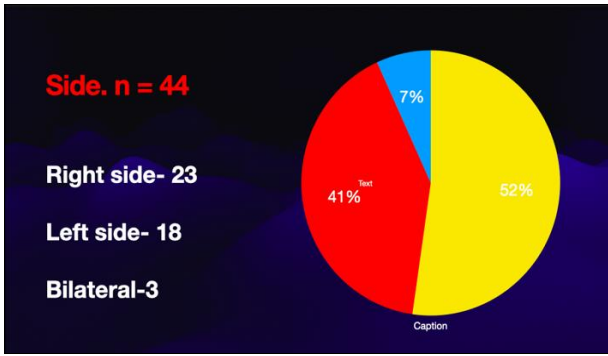
Laparoscopic detorsion is treatment of choice and simultaneously treat the cause using Dr Sachin's criteria. here we put out the results of our study and compare it with other studies done for adnexal torsion over a period of time.

Results

1. Age distribution of adnexal torsion patients



2. Side of adnexal torsion



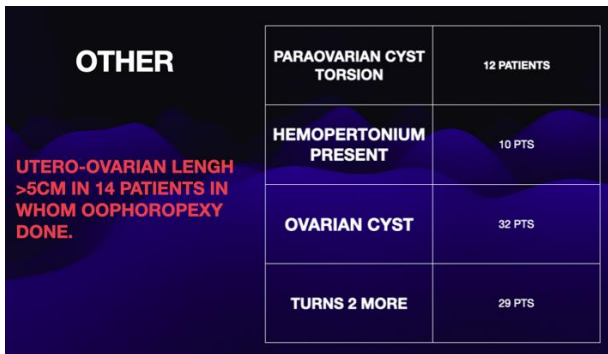
3. Cyst size causing adnexal torsion



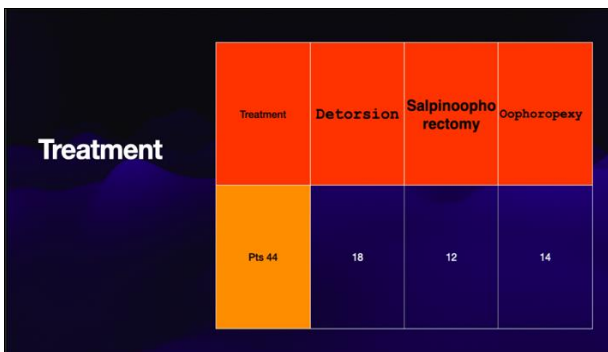
4. Marital status of torsion patients



5 Utero ovarian ligament length comparison



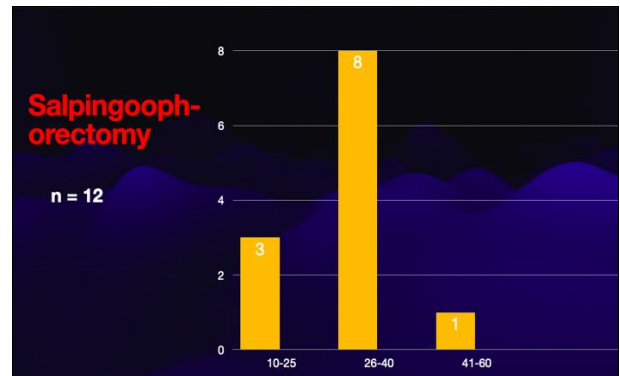
6. Treatment



7. Oophorepexy as treatment modality



8. Salpingo-oophorectomy



Discussion

My criteria is based on study of 44 cases of torsion operated by me and followed up prospectively for a period of 7 years, no case of recurrence noted so far. This criteria will help to standardise the management protocol of adnexal torsion & at the same time avoiding subjectivity so that these patients can be followed up over longer periods as to the fertility after ligament plication.

44 patients who were operated for adnexal torsion were included in this study the 22 (50%) patients were in age group 10-25 years 21(47.7%) patients were in the age group of 26-40years and 1 patient was in 40-60 years of age. Median age of adnexal torsion is 25 year in our study which is comparable to the study by Varma M *et al.* (24 years)^[7]. 52 % patients had right sided torsion, 41 % left sided adnexal torsion and bilateral torsion was found in 3 % of patents. Coming to marital status 25 (56%) patients were married and 19(43.18%) patients were unmarried.

About 43 out 44 patients who had torsion had ovarian cyst size more than 5cm in size suggesting size of cyst is an independent risk factor for adnexal torsion. We measured utero ovarian length as a treatment protocol and done oophorepexy in 14 patients out of 44 and only detorsion in 18 patients 12 (27%) patient required salpingo-oophorectomy where even after detorsion colour was not regained to normal and ovaries were almost necroses having significant hemo-peritonium of this 8 patients were in the age group of 26-40 years.similar reports were also reported by a retrospective study involving 81 cases where (37%) underwent detorsion with cystectomy & in (39 %) salpingo-

oophorectomy was performed [8]. Our study has reduced incidence of sapling oophorectomy due to early resort to diagnosis and more conservative approach toward fertility conserving surgeries. when resorting to utero ovarian ligament plication 4 patients were treated sing “Hotdog in a Bun technique” the age of these patents were less than 15 years hot dog in bun technique is method of placating ovary to round ligament.this method is resorted in cases of pre-menarcheal girls and in cases of recurrence of torsion cases [9]. Round ligament being a fixed structure it will give a firm anchorage preventing torsion subsequently. High percentage of sapling oophorectomy in this study is attributed to the time lag from appearance of pain and reaching to proper consulting doctors they being treated at clinics with pain killers and referred when condition worsened indicating the importance of timely management of these cases and need of keeping high index of suspicion to arrive at diagnosis. Para-ovarian cyst also found to be one of the reason for adnexal torsion 10 (22%). Our study has less incidence of paraovarian cyst torsion as we compaired with the study by Durairaja (18.15%). Since para-ovarian cysts have no pedicle of their own, their torsion usually involves the ovary, fallopian tube or the infundibulo-pelvic ligament [10]. We done laparoscopic cystectomy if cyst size was more than 5 cm in all the patent except 12 patent who required sapling oophorectomy. We compared our study with a retrospective analysis from a tertiary care teaching hospital in northern india, this study incorporated 28 patient with adnexal torsion when comparison done the majority of our results are comparable but in our study almost 99% patient had ovarian cyst size more than 5cm and this study showed 60 % patient had ovarian cyst size more than 5cm. there study reported 39 % sapling oophorectomy rate while in our study it was 27 %.

Our study talks about oophoropexy which is not reported in the study mentioned above also utero ovarian length was not considered as a cause got torsion which is covered by dr Sachin's criteria [11]. making it more comprehensive guidelines when coming across. A adnexal torsion case. Right sided torsion is commonest among our study 52% which is compare to study reported from Pondicherry india.

Conclusion

At present there are no definite guidelines for adnexal torsion management and so different available surgical options are being used by different operating surgeons worldwide &.there is no standardisation of management protocols at present so this criteria is an attempt to standardise the the management protocol & bring in the uniformity in management of adnexal torsion cases so these patients can be benefitted worldwide by resorting to follow the dr Sachin's criteria for adnexal torsion management.

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