

•THINK CRITICAL • DEMAND EVIDENCE • DELIVER CARE •

# NEWSLETTER

**FIRST EDITION** 







Dr. Alpesh Gandhi President

Dr. Atul Ganatra Vice President

Dr. Jaydeep Tank Secretary General



Dr. Nandita Palshetkar Im. Past President



Dr. Rajat Mohanty Past V. President



Dr. Meena Samant Chairperson Clinical Research Committee

# COMPOSITION OF THE COMMITTEE

#### National Co-ordinator Advisors Dr. A.G. Radhika Dr. Alpesh Gandhi Dr. Nandita Palshetkar Dr. P C Mahapatra **East Zone Co-ordinator** Dr Sanjay Gupte Dr. Archana Kumari Dr Suchitra Pandit Dr S N Tripathi West Zone Co-ordinator Dr Leela Vyas Dr. Anupama Dave Dr Nozer Sheriar Dr Heera lal konar North Zone Co-ordinator Dr Anita Singh Dr. Rashmi Vyas Dr Abha Rani Dr.Vinita Das **South Zone Co-ordinator** Dr. Yashodhara Pradeep Dr. Ramaraju Dr Alka Pandey Dr. Ashok Kumar Dr. Durga Shankar

#### EAST ZONE

Dr. Hemani Heidi Sinha (Patna), Dr. Vinita Singh (Jamshedpur), Dr. Amita Sinha (Patna), Dr. Prashant Kumar Deka (Assam), Dr. Mukta Agarwal (Patna), Dr. Suruchi Smriti (Mothihari), Dr. Divya Suman (Patna), Dr. Priyankur (Assam), Dr. Saumya Nanda (Odisha, Dr. Hafiz ur Rahman (Gangtok), Dr. Kalpana Singh (Patna), Dr Nirmala Singh (Ranchi), Dr. Suniti Sinha (Ara), Dr. Rishita (Leharia Sarai), Dr. Ragini Kumari (Maner), Dr. Anuradha (Purnea)

#### WEST ZONE

Dr. Sonal Richharya(Jabalpur), Dr. Swati Bhargav (Indore), Dr. Sonal Shukla (Indore), Dr. Hema Dhumale (Bhilai) Dr. P Kabra (Yawatma), Dr. Bhavika Chauhan(Vapi)

#### **NORTH ZONE**

Dr. Renu Tondon (Kanpur),Dr. Vani Puri (Ghaziabad), Dr. Uma Pandey(Varanasi), Dr. Taruna Bhargav(Noida), Dr. Seema Thakur (New Delhi), Dr. Alpana Kansal( Ghaziabad), Dr. Smriti Agarwal (Lucknow), Dr. Mridu Sinha (Barailey), Dr. Taruna Bhargav (Bulandsehar), Dr. Rinku Chaturvedi (Gorakhpur), Dr. Amrita Saxena(Gorakhpur), Dr. Kanchan Rani (Moradabad)

#### **SOUTH ZONE**

Dr. Shruthi (Telangana), Dr. Uma (Vijaywada), Dr. Nivedita Jha (Puducherry)



Dear friends,

DR. MEENA SAMANT

Happy to bring out the news magazine of CRC, FOGSI. We kept it light reading, at the same time very useful and practical. The article of LITERATURE SEARCH is a thorough guide and it also covers perimortum cesarean delivery case report. Perimortum cd is something everyone should be tuned to, when required. This covid era is proving itself tough and unending But this too shall pass. so, we better hold our ground.

Happy reading Meena Samant



Dear Members, Greetings from CRC FOGSI!



First and foremost, We thank Dr. Meena Samant, chairperson CRC FOGSI for giving us an opportunity to edit this newsletter.

We all have been passing through a very tough time during this COVID pandemic, but our team is working very sincerely to keep our mothers and babies safe and sound.

This issue carries a variety of excellent academic articles and glimpse of activities of CRC in last year.

It also features "Thalassemia Diaries" a very unique and original initiative of CRC FOGSI.

Wish you all a happy reading!



(**Dr.Rajat Mohanty**) MD, FICOG, LLB, WHO Fellow

# Message

It is my pleasure and pride to know that **The Clinical Research Committee**, **FOGSI-2020** will release a News Bulletin regarding research in rural India.

# The owner of immense potentiality is our youth both in rural and urban areas of India; they can build a bridge to the moon or a palace on earth with a flicker of inspiration and encouragement. For us the youth should be an investment for the future.

Keeping the health at the prime importance, I plead the young generation to practice safe sexual health in order to upkeep the reproductive organs in safe. Such physical health awareness will no doubt strengthen the mental health of the youth. This will result in taking proper decision judiciously at the right time. Diet and regular exercise plays an important role among youngsters. Hence it is mandatory to streamline the body with tone-up exercise. On the other hand the young generation should abstain from addiction of drugs and substance which may appear like a mirage but they are at the cost of their precious life. Violence and stress should be wisely curbed by careful thinking and taking safety measures at the right time.

My sincere appeal to my young friends of both rural and urban area of India is that "Take your body as your own, take right decisions at the appropriate time to save yourself from the temporary detrimental pleasures, the future is yours...."

# We cannot always build the future for our youth, but we can build our youth for the future.

#### Incessant youngsters shine with Eternal Fogsi.

# Let us all join hands together for brighter future.

I believe this News bulletin will provide an extensive academic coverage of wide-ranging skills in Obstetrics and Gynaecology from basics to contemporary updates. All my good wishes to make the above News Bulletin a grand success or unique one. I hope this News Bulletin brings out the extensive endeavour of the committee accurately.

# "Jai Hind, Long Live Fogsi"

Dr.Rajat Mohanty (Vice President, Fogsi-2019) Looking for the best solution?? First ask the right question.

Research has its limits, Everything comes after ethics.

Respect autonomy, do not harm, Patients and public, our brothers in arm

Together we search for better cure, Because we care.

Ready to assign? Discuss the study design.

We collect and analyse, The result we finalise.

We think and thrive, This way evidence do arrive.

Publish and flourish.

In a nutshell, it's sure and clear Research is the key of better care!!!





# A CASE REPORT: Bedside Perimortum cesarean delivery after maternal cardiac arrest with fetal survival



Dr. Sipika Tyagi MD, MBBS, DGO

### **INTRODUCTION**

Fortunately, maternal cardiopulmonary arrest is an uncommon complication in the field of obstetrics but that also makes an obstetrician nervous and not well prepared in the event this dreaded complication happens. Perimortem cesarean section, if performed in a timely manner, not only improves the chances of fetal survival but also improves the success rate of maternal resuscitation. I am presenting a case of perimortem cesarean section performed with good fetal outcome.

# **KEYWORDS**

#### CARDIOPULMONARY ARREST, POSTMORTEM, PERIMORTEM , CESAREAN DELIVERY

# CASE PRESENTATION

37 yo G10 P8017 at 42 0/7 weeks was admitted for induction of labor for post term and gestational diabetes type 2 with poor compliance. Patient received all her prenatal care at a different hospital where induction of labor was started for her at 39 1/7 weeks for GDMA 2 with misoprostol and oxytocin but patient left against medical care after 2 days, saying she was unsatisfied with the care provided to her. Patient presented to our hospital at 41 5/7 weeks and Induction of labor was planned which she delayed for few days due to child care reasons. She was an active smoker, smoking 4 packs/day for 12 years, asthma, emphysema on beta 2 agonist, advanced maternal age, grand multiparity. She had all prior uncomplicated spontaneous vaginal deliveries. Last delivery was 10 years ago, BMI was 43. Her past surgical history consisted of cholecystectomy.

On admission for Induction of labor, patient reported no complaints, vital signs were stable. Her physical exam was within normal limits, mild pedal edema was noted bilaterally. Electronic fetal monitoring was category 1, with irregular contractions on tocometry. She was 3 cm dilated and 50% effaced on cervical exam. Blood glucose on admission was 103. Her induction procedure was started with prostaglandins. After 12 hours, some spontaneous fetal decelerations were noted on electronic fetal monitoring and cervical exam was done, cervix was found to be 4 cm dilated and 50% effaced. Artificial rupture of membranes was done, EFM was back to category 1 soon after. The decision was made to start oxytocin for further augmentation of labor.

Within an hour of starting oxytocin, patient complained of 10/10 pain with contractions and the patient suddenly became short of breath, turned cyanotic within seconds and became unresponsive, pulseless. Fetal heart rate dropped to 60 bpm. The code team was called and CPR was started by the Obstetrics team. The code team arrived soon and the patient was handed over for resuscitation. The decision was made to proceed with bedside Cesarean section. Betadine was splashed over the lower abdomen.

Using a disposable scalpel, a pfannenstiel incision was made at the 4 minute mark from the maternal collapse with ongoing active maternal resuscitation. Lower uterine segment hysterotomy incision was made and a female baby was delivered via vertex presentation within one minute of incision with the Apgar scores of 1 and 9. Baby handed to the awaiting neonatology team. Uterus was closed with single layer locking stitches. The fascia was closed with suture and skin was stapled. Entire surgery was performed with on going active CPR. Incision to skin closing time was 4 minutes. Scalpel, clamps and scissors were the only instruments used during this bedside cesarean section.

Maternal resuscitation was continued by the team of cardiologist, pulmonologist, intensivist. Patient was moved to the ICU with sinus tachycardia rhythm on maximum doses of vasopressors. Patient soon again was in pulseless electrical activity. After almost 5 hours of resuscitative efforts, the patient's husband decided to with-draw life support and requested DNR. Family's wishes were respected. Baby moved to the ICU to be with mom. Patient was extubated and pronounced dead. Baby did well post delivery and remained with the family.

US leg dopplers done in ICU revealed non occlusive thrombus in the left common femoral vein. Autopsy revealed ACUTE PULMONARY EMBOLI with normal post-gravid uterus post cesarean section with no evidence of excess hemorrhage.

### DISCUSSION

Management of Cardiopulmonary arrest in pregnant female is very much the same as in other adults with some changes. Maternal stabilization is the first step, if the gravid uterus is above the umbilicus (> 20 weeks) it could be a potential barrier in successful CPR and uterine displacement is required. Resuscitative hysterotomy is recommended for > 20 week uterine size as it alleviates the aortocaval compression and improves the efficacy of cardiopulmonary resuscitation. Perimortem cesarean section also improves the chances of fetal survival despite maternal death. Case reports from US, UK and other countries have reported fetal survival rates as high as 58% if delivery is done in timely fashion. Though the 4 min rule from the maternal arrest for fetal delivery is practiced in many institutes, the procedure should be considered as soon as the initial resuscitative measures are unsuccessful. The obstetrics team should start preparing for the delivery within a few minutes of the arrest. There have been reports of fetal survival with delivery done at 25- 30 minutes after maternal death.

In conclusion, perimortem cesarean section is a rarely performed procedure, which if performed in timely manner, can improve maternal and fetal survival and should be highly considered in the event of maternal cardiopulmonary arrest.

#### A C K N O W L E D G E M E N T S

None

#### **Conflict of Interest**

None

#### **REFERENCES**

- ACOG Practice bulletin 211, Critical care in pregnancy.
- Drukker L, Hants Y, Sharon E, Sela HY, Grisaru-Granovsky S.

Perimortem cesarean section for maternal and fetal salvage: concise review and protocol. Acta Obstet Gynecol Scand 2014;93:965-972



Indore

Telangana



Purnea







Motihari

Tech Support



Webinar Organised exclusively for PG students on paper writing/thesis writing

E-CME on Basic Concept For Management Of Surgical Wounds



Anemia conclave organised by FOGSI & CRC participated .



Webinar with societies of South India on haematological disorders in pregnancy



# **LITERATURE SEARCH: How To Search**



#### Dr. Kanchan Prasad

MBBS, MS(0&G) FICOG Fellow Reproductive Medicine Associate Professor TMMCRC,Moradabad

# The systematic and well organized search of already published data on a particular topic is called a literature search.

It may be:

Basic -Increasing basic knowledge.

Applied- Apply this knowledge to develop new process or to throw a light on an unknown area.

Literature search is an important step in any health research because it is an important link between already existing knowledge and what is not known. It is a key step in performing good authentic research.

# **Need of Literature Search**

- It Helps in formulating a research question and planning a study.
- There is gigantic collection of published data and to search for a suitable pertinent article among them needs skill and craftsmanship.
- Improper literature search can be time consuming, tedious and can lead to disinterest.
- It helps the search specific and less painstaking.

#### **Aim of Literature Search**

There are multiple reasons for carrying out literature search, which includes

- Making of evidence based guidelines
- To move forward already existing research a step further
- To fill the gap of some unanswered questions
- As a part of enhancing academic knowledge

# Types of medical literature

Different types of publications are included in different type of literatures.

(Ta	ab	le	1	)
· · ·	_			

TYPES		Sources
Primary Literature	<ul> <li>-Authentic publication having original data, new evidence and conclusions</li> <li>-Usually published in peer reviewed journals</li> <li>- Includes Case reports, Case series, clinical trials, conference papers, Preliminary reports and preprints.</li> </ul>	Lancet,NEJM,JAMA
Secondary Literature	-Includes Meta-analyses, systematic review, review articles, practice guidelines	Cochrane Library, PubMed, Web of Science, CINAHL
Tertiary Literature	-Includes Encyclopedias, Textbooks, Handbooks where key findings ,various established guidelines and conclusions derived from primary and secondary literature are complied.	William's Obstetrics, Novaks Gynaecology

### Methods of Literature search

Various methods of literature search available now a days but protocoled and focused literature search is the key to success. Physical literature search of textbooks, journals in library is still one of the most important source of literature. However with easy accessibility of internet and availability of literature on World Wide Web had made search quite easy and saves a lot of time. Various web based search engines and electronic database are available for literature search.

- A database is an organized collection of data or information which can be accessed, managed and updated through computer
- A search engine is a web-based tool which helps us in locating required information in worldwide web.

These methods can be used in combination to provide an effective literature search. [Table 2] Literature search can be done using various database that provides original published articles in journals or databases which provides access to evidence based informations in the form of abstracts ,Systemic reviews.[Table 3] Many of these databases are free for access, however some are paid too.

• **Pubmed** is one of the most widely accessed database in world with millions of online books, life science journals and medline citations are available for literature search in it. Other important databases are Medline, Cochrane library, Embase and central trial registry

Searching single database is never enough which necessitate the need for searching different database .While performing search it is always important to focus on meta-analysis, systematic reviews, randomized controlled trials and various landmark studies which previously answered or tried to answer the formulating question.

Table 2    Various Methods of literature search				
Protocol driven	Based on Personal Kowledge	Snowballing		
Physical literature search	Already existing theories	Retrospective reference chase		
Electronic database search	Basic Knowledge	Citations tracking		
	Particular contacts and academic system			

Table 3 Methods of literature search					
Web Based         Electronic evidence based			Electronic evidence based		
Resources	Web address	Resources Web address			
Search engines		Cochrane database of systematic review	https://www.cochranelibrary.com/		
1.google	https://www.google.com/	Dartmouth EBM database	https://www.dartmouth.edu/~library/biomed/ guides/research/ebm-az-list.html		
2. yahoo	https://in.search.yahoo.com/	ACP Journal Club	https://www.acponline.org/clinical-information/ journals-publications/acp-journal-club		
3.google scholar	https://scholar.google.com/	Pub med	https://pubmed.ncbi.nlm.nih.gov/		
Electronic	source of database	Ovid Medline	https://www.ovid.com/		
Pubmed	https://pubmed.ncbi.nlm.nih.gov/	E medicine	https://emedicine.medscape.com/		
Medline	https://www.nlm.nih.gov/	Uptodate	www.uptodate.com		
MeSH	https://www.ncbi.nlm.nih.gov/mesh/	Webmd	www.webmd.com		
SCOPUS	https://www.scopus.com/	Mdconsult	www.mdconsult.com		
EMBASE	https://www.embase.com/login	Mercmedicus	www.mercmedicus.com		
CINAHL	http://www.cinahl.com	Medscape	www.medscape.com		
Indian Medical database	http://medind.nic.in/	TRIP database	https://www.tripdatabase.com/		
ERIC	https://eric.ed.gov/	EvidenceAlerts	https://www.evidencealerts.com/		
Medline (MEDical Literature Analysis and Retrieval System)					
EMBASE (Excerpta Medica database)					
CINAHL(The Cumulative Index to Nursing and Allied Health Literature					
MeSH (Medical Subject Heading)					

# Appropriate place to search

To narrow down literature search we must be aware of the appropriate place where we can search our formulated question. To know general information about a disease we can use search engines like google or heath on net certified sites on World Wide Web.

While to gather some specific knowledge regarding a particular disease in form of case reports, case series or clinical trials or any other required article we can search in medical database like Pubmed, SCOPUS, Google Scholar etc.

Pubmed is maintained by National centre for biotechnology in US maintained library of medicine under national institute of health. It is free and open to access. These are huge collection abstract ,citations ,articles having link outs resource where full text article is available. PMC or pubmed central has collection of free text articles which are freely accessible through Pubmed.

The archived full text articles is another place where we can find full text articles. This is directory of journals in either physical libraries or e libraries. These libraries are either freely accessed or are paid. Here we can find all required archived full texted articles related to our specific literature search.

Another place to review highest evidence based articles like systemic reviews and meta analysis related to our literature search are portals like Cochrane Library, Map of Medicine etc.

General information -Search Engine e.g. Google -HON certified sites	Specific Query Pubmed/ EMBASE/ SCOPUS etc database	
Appropries Appropriate to the second se	opriate o search	
To evidence based articles	Archived full texted articles	
-Systematic review/ Meta- analysis	-either physical libraries or e -libraries	
-Chocrane Library/ Map of	-Free open access or paid	

# **Types of search**

According to question formulated different types of literature search is done in order to retrieve maximum data of intrest.

- 1. Keyword search
- 2. Boolean query
- 3. Phrase Search
- 4. Truncating search terms
- 5. Applying filters

#### **Keyword Search**

Keyword search is one of best and effective mode of literature search. Synonyms can be considered like carcinoma in place of cancer to complete the search. Most databases have vocabulary of keywords. Combining keywords with Boolean operators is also an effective technique for literature search.

US national Library of medicine maintains its own set of predefined vocabulary called MeSH or Medical Subject Heading. These are NLM controlled Vocabulary thesaurus used for indexing articles for PubMed. MeSH terms are found in articles under abstract as keywords. This is important because any article having keywords in concordance with MeSH terms are more likely to be identified.

#### **Boolean operators (AND, OR, NOT)**

Boolean query is a standardized basic web based search in database. It is applicable in google, PubMed, Embase etc .It uses important connection called AND, OR, NOT queries. For example here we applied Boolean query in Pubmed in order to search connection between tuberculosis and genital infections. [Figure]

- AND retrieves results that include all the search terms specific to tuberculosis and genital infections.
- OR retrieves results that include entire articles on tuberculosis, entire articles on genital infection and entire articles where both are present.
- NOT retrieves articles having tuberculosis only but no genital infection.

	E	BOOLEAN QUERY		·
		AND	OR	NOT
Articles on endometrium only	Articles on tuberculosis only	Specific to endometrium and tuberculosis	Entire articles on Endometrium & Tuberculosis & entire articles where both are there.	Articles having only Endometrium but no tuberculosis
Pub Med.gov	Pub Med.gov	Pub Med.go	Pub Med.gov	Publed.gov
endometrium	Tuberculosis	Endometrium AND Tuberculosis	Endometrium OR Tuberculosis	Endometrium NOT Tuberculosis
Advanced Create alert Create RSS	Advanced Create alert Create RSS	Advanced Create alert Create RSS	Advanced Create alert Create RSS	Advanced Create alert Create RSS
➢ Filters <u>Ini</u> Timeline Be 45,297 results 45,297 results	♣ Filters <u>Init</u> Timeline E 260,710 results 260,710 results	E Filters ▲ Timeline 308 results 308 results	Filters     Immeline     Ber       305,699     results       305,699 results	<ul> <li>♣ Filters <u>Inf Timeline</u> Best</li> <li>44,989 results</li> <li>44,989 results</li> </ul>
Strategies to manage refracto	Perspectives on Advances in	Current Diagnosis and Mar	Menstrual physiology: implica	Menstrual physiology: implicat

#### **Phrase Search**

In phrase search the point of interest is only typed with no words in between them.

In Pubmed phrase search is enclosed in double quotes like "cancer uterus". It will include all citation having uterus cancer will include citations which are indexed in MeSH term, "cancer uterus " but will not include cancer of uterus, cancers of the uterus which are included in the automatic MeSH mapping.

#### **Truncating Search Terms**

In Pubmed truncating search term is used to search all terms that begin with a particular word . The word to be searched is entered followed by an asterisk (\*). Phrases can also be searched including a truncated term and truncated term must be the last word in phrase followed by asterisk. Truncation stops automatic term mapping and the process that includes the MeSH terms like cancer uterus\* will not include MeSH terms like adenocarcinoma of uterus, uterus etc.

#### **Filters**

Various filters are available which further narrows down the literature search. Filters which can be used are article type, publication date, text availability, journal category species, language, sex, subject, and age.

To apply a filter:

- 1. Run a search in PubMed eg tuberculosis and genital infection.
- 2. Click the filter option "Additional Filter" button will appear.
- 3. On clicking the "Additional filters" button a pop-up menu will appear showing the available filters for each category: article type, species, language, sex, subject, journal, and age.
- 4. On choosing a category from the list of options various filters would appear which can be selected.



# Writing a literature review

#### 1.Introduction

- Purpose of review
- Organization of review
- Basis of ordering
- Most important to least
- Earliest to most recent
- 2. Empirical literature
  - Includes quality studies relevant to topic
  - Explain each study using paraphrasing rather than direct quotes
  - Scholarly, but brief, critique of study's strengths and weaknesses
- 3. Summary
  - · Concise presentation of the research knowledge about a selected topic-what is known and not known



#### Example table of literature review

Citation	Design	Objectives	Study Population	Sample size	Measurable outcome & Results	Authors Conclusion
	Chronologically Placed					
	RECENT					
	PAST					

#### Ethical Issue

• Content from studies -- Presented honestly

-- Not Distorted

Weakness of a Study

--Addressed; not necessary to be highly critical

• Sources should be accurately documented

#### Reference

- 1. Cronin P, Ryan F, Coughlan M. Undertaking a literature review: A step-by-step approach. Br J Nurs. 2008;17:38-43.
- 2. Ebbert JO, Dupras DM, Erwin PJ. Searching the medical literature using PubMed: A tutorial. Mayo Clin Proc. 2003;78:87-91.
- 3. Ebbert JO, Dupras DM, Erwin PJ. Searching the medical literature using PubMed: A tutorial. Mayo Clin Proc. 2003;78:87-91.
- 4. Jain V, Raut DK. Medical literature search dot com. Indian J Dermatol Venereol Leprol. 2011;77:135-40.

5. PubMed Help. Bethesda (MD): National Center for Biotechnology Information (US); 2005. [Last updated on March 31, 2020; Last cited on 2020 Jul 16]. PubMed Help. Available from:

http://www.ncbi.nlm.nih.gov/books/NBK3827

6. "George Boole" Encyclopaedia Britannica. Encyclopaedia Britannica Online. Encyclopaedia Britannica Inc. 2020. [Last cited on 2020 Jul 16]. Available from: http://www.britannica.com/biography/George-Boole .

# QUIZ

1. Which of the following parameter is appropriate measure to evaluate the impact of a preventive programme?

- A. Point prevalence.
- B. Period prevalence.
- C. Incidence
- D. Incidence density

#### 2. Which of the following epidemiologic measure is appropriate to determine the severity of an acute disease?

- A. Case fatality ratio
- B. Prevalence
- C. Incidence ratio
- D. Mortality rate

#### 3. Population census is which type of study?

- A. Analytic study
- B. Ecological study
- C. Cross sectional study
- D. None of the above

#### 4. To estimate the incidence of myocardial infraction cases among a group of smoker followed up for 10 years, the type of study will be?

- A. RCT
- B. Cohort
- C. Case series
- D. Cross sectional
- 5. Review of literature is useful while drafting a scientific study is all sections except?
- A. Methods
- B. Introduction
- C. Discussion
- D. Results
- 6. All clinical trials in India should be registered with clinical trial registry of India
- A. True
- B. False

Key:- 1-c 2-a 3-d 4-d 5-c 6-b

# Research In This Pandemic Era



Dr. Divya Suman MBBS, MS, FMAS

An ongoing medical research of today, is the future of medical science. The quality health care we enjoy today is the result of long and tiring hours of research done years before. Medical research provide important information about disease trends and risk factors, outcomes of treatment or public health interventions, patterns of care and healthcare cost and uses. Research is of paramount value at any given time but, this pandemic is giving us all a new insight. In developing world, we are continuously ignoring research work for example till August 2012, India conducts only 1.4% of global research while it represents 17.5% of world population.[1-3] This lack of interest is affecting us and we are totally dependant on WHO and western world for the development of our healthcare system infrastructure. Although, the population of Indian subcontinent have a unique gene pool and a specific healthcare characteristics, environment and needs. So, the promise of an innovative, population specific healthcare system supported by indigenous evidence based medical research is the need of hour.

HOW PANDEMIC IS CHANGING THE MEDICAL RESEARCH

- Calling On Technology : The world suddenly stopped, so researcher are using all recent technology to collect data. It has become almost impossible for patients or participants to visit clinics or offices, so, phone calls, video calls, video conferencing and anything you imagine is the new way to collect data. These new techniques are so much help as the overall participation from different ongoing trials is falling every day.
- **Transparency** : The pandemic is also erasing the secrecy that pervades medical research for longtime as research can lead to grants and promotions so working secretly and suspiciously, hoarding data from potent competitor was a frequent practice. But the ability to work collaboratively, setting aside personal academic progress is occurring now because it is a matter of survival . The world is becoming more transparent. Data sharing is not a big deal now, because we are desperate for the cure.
- **Relaxing Rules** :- Following the proper ethical rules and steps, modifications and changes are allowed and welcomed like facetime and video calling is now an alternative of patients interviews. Modification of patients site visit, Removal of participant from ongoing research due to COVID-19 positive test or area falling under h COVID positive area can be done without much problems .Normal imperative like academic credits have been set aside.
- Sharing Is Caring : In the era of locked political borders, scientists have been shattering theirs, creating a global collaborations unlike any history. Researchers have identified and shared hundreds of viral genome across the world. The two online archives, MedRxiv and BioRxiv, Sharing the academic research online before it has been reviewed and published in journals have been flooded with coronavirus research across the world. Online repositories make studies available months ahead of journals.

Despite the nationalistic tone of Chinese president and initial covering up of outbreak, Chinese researchers have contributed a significant portion of the coronavirus research. A Chinese laboratory made viral genome available on January that made basis of coronavirus test worldwide. So, the learning is again very basic that emergencies can be managed by keeping an emergencies tray handy. This is a research emergency call. For a specific protocol development we have to develop the basic framework of data collection, record keeping, understanding of biostatistics, protocol development guides and most importantly creating research friendly environment.

REFERENCE

1.U.S. Census Bureau. International Population Reports WP/02. U.S. Government Printing Office; Washington, DC: 2002. Global Population Profile. [Google Scholar] 2.Census Info India 2011.



# Placenta Accreta Spectrum: What's new ??



Dr. Meena Samant MBBS, MS, DNB, MRCOG

It was back in 1937, when Irving and Hertig Published the ever first cohort study on placenta accreta in an international journal<sup>[1]</sup>. In their article they described clinical and histopathological findings of 20 cases and a literature review of 86 cases.

We have came so far since 1930s, this is the era of cesarean section epidemic. This increased rate of cesarean deliveries and many uterine surgeries is the obvious reason behind the raising prevalence of placenta accreta cases worldwide. The classical clinical clinical description of PAS is "difficult manual, piecemeal removal of the placenta", "absence of spontaneous placental separation 20–30 minutes after birth despite active management", "retained placental fragment requiring curettage after vaginal birth"or "heavy bleeding from the placentation site after removal of the placenta during cesarean delivery". As, Placenta Accreta Spectrum has a global impact on maternal health, newer research and data always kept popping up.So, it is become of great importance to improve the accuracy of diagnosis and standardisation of data collection as well as reporting guidelines. Lukes classification of placenta accreta in mid 1960s is still the criteria[3] we are following and according to this we have three criteria namely

- 1. placenta adherenta or vera- villi are attached directly to the surface of the myometrium without invading it
- 2. placenta increta- villi penetrate deeply into the myometrium up to the uterine serosa
- 3. placenta percreta-invasive villous tissue penetrates <u>through the uterine serosa</u> and may reach the surrounding pelvic tissues, vessels, and organs.

Like other pathological conditions, histopathology is considered as the gold standard tool to confirm the

diagnosis of PAS. But, histopathological confirmation may not be available in cases where managed conservatively or in adherent accreta. Retrospective grading of PAS has no long term effect on the life of a patient, so, there is lack of interest in accurately differentiating between invasive and adherent form of placenta. This lack of accuracy many times lead to over treatment and diagnosis related anxiety for many patients.

Keeping this in mind, FIGO introduced a classification system for the clinical diagnosis of Placenta Accreta Spectrum[2]. This is basically a classification system (not a staging system), to standardise clinical criteria for the diagnosis of the condition at birth and the histopathological differential diagnosis between adherent and invasive accreta placentation.

#### Grade 1: Abnormally adherent placenta (placenta adherenta or creta) Clinical criteria

At vaginal delivery

• No separation with synthetic oxytocin and gentle controlled cord traction

• Attempts at manual removal of the placenta results in heavy bleeding from the placenta implantation site requiring mechanical or surgical procedures

If laparotomy is required (including for cesarean delivery)

- Same as above
- Macroscopically, the uterus shows no obvious distension over the placental bed (placental "bulge"), no
  placental tissue is seen invading through the surface of the uterus, and there is no or minimal
  neovascularity.

Histologic criteria

- Hysterectomy specimen shows extended areas of absent decidua between villous tissue and myometrium with placental villi attached directly to the superficial myometrium
- The diagnosis cannot be made on just delivered placental tissue nor on random biopsies of the placental bed.

# Grade 2: Abnormally invasive placenta (Increta)

Clinical criteria

At laparotomy

- Abnormal macroscopic findings over the placental bed: bluish/purple colouring, distension (placental "bulge")
- Significant amounts of hypervascularity
- No placental tissue seen to be invading through the uterine serosa.
- Gentle cord traction results in the uterus being pulled inwards without separation of the placenta (socalled the dimple sign)

Histologic criteria

 Hysterectomy specimen or partial myometrial resection of the increta area shows placental villi within the muscular fibers and sometimes in the lumen of the deep uterine vasculature (radial or arcuate arteries)

# Grade 3: Abnormally invasive placenta (Percreta) Grade 3a: Limited to the uterine serosa

At laparotomy

- Abnormal macroscopic findings on uterine serosal surface and placental tissue seen to be invading through the surface of the uterus
- No invasion into any other organ, including the posterior wall of the bladder

Histologic criteria

· Hysterectomy specimen showing villous tissue within or breaching the uterine serosa

# Grade 3b: With urinary bladder invasion

At laparotomy

- · Placental villi are seen to be invading into the bladder but no other organs
- Clear surgical plane cannot be identified between the bladder and uterus

Histologic criteria

•Hysterectomy specimen showing villous tissue breaching the uterine serosa and invading the bladder wall tissue or urothelium.

#### Grade 3c: With invasion of other pelvic tissue/organs

At laparotomy

• Placental villi are seen to be invading into the broad ligament, vaginal wall, pelvic sidewall or any other pelvic organ (with or without invasion of the bladder)

# Histologic criteria

•Hysterectomy specimen showing villous tissue breaching the uterine serosa and invading pelvic tissues/ organs (with or without invasion of the bladder)

This classification system is here to improve the understanding of PAS and to standarise the diagnostic criteria, terminology and methodologies used for PAS, so, the more accurate information can lead a better management protocol and improvement of maternal health. With this idea FIGO has also suggested an standardised format for basic dataset for publication.

# **Basic Dataset For Reporting On Placenta Accreta Spectrum**

Background population

- Institution-based study
- Display referred cases and cases from local catchment area in separate data sets
- Description of background population and cases including number of births, mode of delivery, parity, local CD rate Regional/network/national-based study
- Description of local background population including number of births, mode of delivery, parity, CD rates for referred cases and local cases.
- Ultrasound signs of placenta accreta spectrum, including placental location
- MRI signs of PAS including surface area and depth

Management strategy

- Intended mode of management: vaginal delivery, scheduled CD, hysterectomy (primary or delayed), focal myometrial resection, leaving the placenta in situ
- Actual mode of management: vaginal delivery, scheduled CD, emergent CD, focal myometrial resection, hysterectomy (primary or delayed), leaving the placenta in situ and other uterine spearing methods.

# Confirmation of diagnosis:

- Clinical diagnostic criteria and confirmed histopathological diagnosis when possible
- The final diagnosis (clinical, histopathological) should be clearly stated and made according to the classification.

There is no doubt that rate of PAS has increased and it is going to follow this rising trend. This is a potent threat to maternal health structure and maximum complications for both mother and newborn are observed when this condition is only diagnosed at delivery.So, maternal morbidities can be reduced if PAS can be diagnosed in prenatal stage. Here comes the role of imaging modalities and their effective use for early diagnosis of PAS. Sonography and MRI are the two means to diagnose PAS and diagnostic criteria for PAS is listed:-

# On Ultrasound

Several sonographic criteria for PAS-

- Marked thinning or loss of the retroplacental hypoechoic zone
- · Interruption of the hyperechoic border between the uterine serosa and bladder
- Presence of mass-like tissue with echogenicity similar to that of the placenta
- Visualization of prominent vessels or lakes within the placenta or myometrium
- When a placenta accreta occurs on the posterior or lateral walls of the uterus, it may be difficult to detect
   by ultrasound

# On MRI

The demonstration of uterine bulging and loss of normal uterine contour.

# T2

On T2 weighted MR images, the mass is hyper intense and may be heterogeneous.

Also, T2 weighted MR images are useful in the assessment of focal thinning of the myometrium and interruption of the junctional zone.

To read and report Ultrasound and MRI markers for PAS, following signs can be alarming as on Ultrasound

- Abnormal placental lacunae
- Bladder-wall interruption
- · Focal exophytic mass of placenta extending beyond the serosa
- Gray-scale evaluation of loss of the hypoechoic layer between myometrium and placenta
- Myometrial thinning to <1 mm</li>
- Placental bulge distorting extrauterine organs

when color Doppler US shows

- · Placental lacunae feeder vessels causing turbulent flow
- Presence of bridging vessels from the placenta crossing the myometrium into adjacent structures
- Subplacental hypervascularity
- · Uterovesical hypervascularity
- Suspicion of parametrial involvement

### On MRI

- Intraplacental T2-weighted dark bands
- Abnormal intraplacental vascularity
- Heterogeneous intraplacental signal intensity
- · Focal interruption of the myometrium by the placenta
- Uterine bulging

Sensitivity of MRI for detecting PAS is 86% to 95%, with specificity of 80% to 95%.

It is seen that a proper antenatal care and planned deliveries resulted in reduced complications in both mothers and newborns.So, in 2018 NICE proposed newer recommendations on antenatal care for PAS. They are as follows:-

The midpregnancy routine fetal anomaly scan should include placental localisation thereby identifying women at risk of persisting placenta praevia or a low-lying placenta. [*New 2018*]

The term placenta praevia should be used when the placenta lies directly over the internal os. For pregnancies at more than 16 weeks of gestation the term low-lying placenta should be used when the placental edge is less than 20 mm from the internal os on transabdominal or transvaginal scanning (TVS). [*New 2018*]

If the placenta is thought to be low lying (less than 20 mm from the internal os) or praevia (covering the os) at the routine fetal anomaly scan, a follow-up ultrasound examination including a TVS is recommended at 32 weeks of gestation to diagnose persistent low-lying placenta and/or placenta praevia.

TVS for the diagnosis of placenta praevia or a low-lying placenta is superior to transabdominal and transperineal approaches, and is safe. [*New 2018*]

In women with a persistent low-lying placenta or placenta praevia at 32 weeks of gestation who remain asymptomatic, an additional TVS is recommended at around 36 weeks of gestation to inform discussion about mode of delivery. [*New 2018*]

Antenatal diagnosis of placenta accreta spectrum is crucial in planning its management and has been shown to reduce maternal morbidity and mortality. [*New 2018*]

Previous caesarean delivery and the presence of an anterior low-lying placenta or placenta praevia should alert the antenatal care team of the higher risk of placenta accreta spectrum.

Ultrasound imaging is highly accurate when performed by a skilled operator with experience in diagnosing placenta accreta spectrum. [*New 2018*]

Refer women with any ultrasound features suggestive of placenta accreta spectrum to a specialist unit with imaging expertise. [*New 2018*]

Women with a history of previous caesarean section seen to have an anterior low-lying placenta or placenta praevia at the routine fetal anomaly scan should be specifically screened for placenta accreta spectrum. [*New 2018*]

The diagnostic value of MRI and ultrasound imaging in detecting placenta accreta spectrum is similar when performed by experts. [*New 2018*]

MRI may be used to complement ultrasound imaging to assess the depth of invasion and lateral extension of myometrial invasion, especially with posterior placentation and/or in women with ultrasound signs suggesting parametrial invasion.

The world is evolving so the disease burden and thus the health care system is bound to evolve, to fight against these new forms of disease burden.Better Anaesthesia, antibiotics and fineness in surgical skills, had lead us to this era when we are not able to keep a check on cesarean deliveries rate, so, all international agencies are working together to minimise the complications of PAS and to strengthen the maternal health.

 Irving C, Hertig AT. A study of placenta accreta. *Surg Gynecol Obstet.* 1937;64:178–200.
 auniaux E, Chantraine F, Silver RM, Langhoff-Roos J; FIGO Placenta Accreta Diagnosis and Management Expert Consensus Panel. FIGO consensus guidelines on placenta accreta spectrum disorders: Epidemiology. *Int J Gynecol Obstet.* 2018;140:265–273.
 Luke RK, Sharpe JW, Greene RR. Placenta accreta: The adherent or invasive placenta. *Am J Obstet Gynecol.* 1966;95:660–668.

Discovery is SEELAC WARAC everypody else has seen, and chinking what nobody else has Albert Szent Györgyi