



# Pioneers in Obstetrics and Gynecology

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The practice of modern obstetrics and gynecology is built upon the discoveries, innovations, and tireless efforts of numerous pioneers throughout the history. Each contributor has played a crucial role in shaping the field, and while it is difficult to encapsulate all their achievements in a single article, this overview highlights some landmark contributions and key figures. The information presented here has been carefully collected from various sources and verified with available literature to ensure accuracy wherever possible.



## 1. Gabriele Falloppio (1523-1562)

Gabriele Falloppio, an Italian anatomist described the uterine tubes with which his name is associated. He described also the skeletal system of the fetus and described also the clitoris. His revolutionary work 'Observationes Anatomicae' was published in 1561 in Vince. Renaissance of anatomy started after the great anatomists Fabricius, Vesalius and Gabriele Falloppio.



*Peter Chamberlen the third*

## 2. Peter Chamberlen, the elder (Peter I) (1560-1631)

Peter Chamberlen II, the younger (1572-1626) and Peter the Third (1601–1683) (**Figure**). Obstetric forceps, a major innovation for instrumental vaginal delivery was introduced by Chamberlen family around 1600 AD. The eldest and the youngest children of William's Chamberlin- were Peter I/II. It is said that obstetric forceps were invented by one of the Peter I and Peter II, probably by Peter I. This family was Huguenot refugee and came to England in 1569. This instrument was kept secret in the Chamberlen family for 100 years or more. Peter I attended Anne of Denmark, Queen consort of James and other notable women of the society for confinements. Four generations of Chamberlen reigned in full swing with forceps till the death of Hugh Chamberlen the younger (junior) (Born 1664, died 1728). In 1818, a number of Chamberlen's instruments were discovered in a well-concealed chest in Woodham Mortimer Hall, Essex. Peter the Third (1601–1683) was the son of Peter Chamberlen II, the younger.

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### 3. Anthony van Leeuwenhoek (1632-1723)

Leeuwenhoek is commonly known as father of microbiology and one of the first microscopists and microbiologists. He designed many types of microscopes himself. Van Leeuwenhoek is best known for his pioneering work in microscopy and for his contributions toward the establishment of microbiology as a scientific discipline. He was also the first to document microscopic view of RBC, bacteria, muscle fibres, spermatozoa and many. He described the spermatozoa in 1677.



### 4. Francois Mauriceau (1637-1709)

Francois Mauriceau, a famous French Obstetrician is said to report caesarean section first in living woman in 1668. Francois Mauriceau was the author of best selling text book 'Observations sur la grossesse et l'accouchemen 1668' at that time. Hugh Chamberlen (elder) elder during return from Paris (1670) collected a copy of Francois Mauriceau's book and translated into English under the title 'The Accomplish't Midwife'. He is also known for development of a classical manoeuvre of assisted breech delivery (Mauriceau-Levret manipulation)



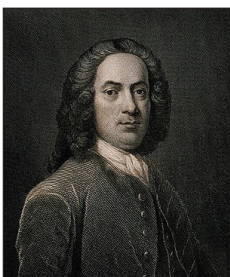
### 5. Regnier de Graaf (1641-1673)

Graafian follicles is after the name of Regnier de Graaf. After returning to Holland he studied on male and female generative organs in goats and rabbits. He published his greatest work in "De Mulierum Organis" with beautiful illustrations in 1672.



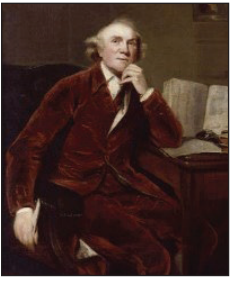
### 6. Caspar Bartholin (1655-1738)

Caspar Bartholin the Younger (1655-1738) was a Danish physician and anatomist. Bartholin's gland was named after Caspar Bartholin for the detailed description of the gland. Bartholin was a man of wide interests and great versatility. He became professor of philosophy in very young age of 19 and later became professor of physics when he used to give lectures in anatomy. His famous 'De Ovariis Mulierum' was published in 1677.



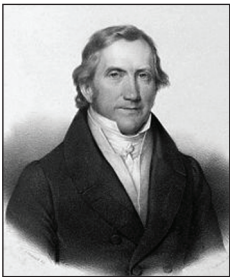
### 7. William Smellie (1697-1763)

William Smellie is one of the famous obstetricians of all time. His book 'Treatise on the theory and practice of midwifery' is outstanding where he described normal and abnormal pelvis accurately. His short forceps are remarkable. He is first to measure diagonal conjugate. He was described as 'great horse God-mother of a he-midwife'



## 8. John Hunter (1728-1793)

John Hunter who was a Scottish surgeon first documented artificial insemination with husband's semen (AIH). It was reported by John Hunter in 1770. He used quill for insemination. First successful donor insemination was conducted by Joseph Pancoast in 1884



## 9. Franz Carl Naegele (1778-1851)

Negele's Rule, Naegele's Asynclitism, and the Naegle Pelvis were after the name of Franz Carl Naegele. He was born in Germany. In early life he became official physician when he was interested in obstetrics problems and later became extraordinary professor of physiology and pathology. In late life he became the director and professor of lying -in hospital. **Naegele's Rule** - The formula to calculate the expected date of delivery by adding seven days to the first day of the last menstruation and counting back three months is designated as Naegele's rule. **Naegele's Asynclitism** - In mechanism of labour engagement in cephalic presentation occurs mostly in transverse with the sagittal suture parallel to the transverse diameter of the inlet. It is said 'synclitic' when the sagittal suture lies equidistant from the sacral promontory and pubic symphysis. More often, the sagittal suture deviates, toward the promontory or symphysis, anterior or posterior asynclitism resulting according to the anterior or posterior parietal bone presentation. Anterior asynclitism, or anterior parietal presentation, is often referred to as Naegele's obliquity which was described in his monograph, "Ueber den Mechanismus der Geburt" in 1819. **Naegle Pelvis** - Naegle had lot of work on bony pelvis. He described the obliquely contracted pelvis where one ala is absent, later named as Naegle Pelvis in a monograph, "Das Schrag Verengte Becken", in 1839. Heinrich Ludwig Ferdinand Robert (1814-1878)- Robert from Marburg, Germany encountered a very rare malformation of pelvis shortly after description of Naegle pelvis. Here both the ala is absent and known as Robert or double Naegle pelvis.



## 10. Ferdinand August Maria Franz von Ritgen (1787 –1867)

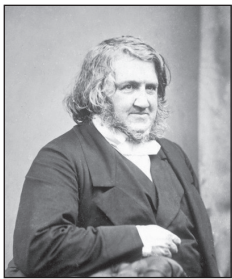
Von Ritgen was a German Obstetrician and naturalist. He is remembered for training for midwives. His name is associated with the so-called "**Ritgen's maneuver**" a technique by giving pressure over the perineum during delivery of fetal head simultaneously pressing the head with the other hand to control the speed of delivery. Later, he founded a school for midwives.



## 11. Johannes Peter Muller (1801-1858)

Johannes Muller was foremost German physiologist of his days. **Mullerian Ducts** was named after the name of Muller. He had 20 books, and about 250 scientific papers illustrated with 350 hand-drawn plates, contributing to almost all fields of basic medical research. His treatise on the embryology of the genitalia in vertebrates, "Bildimgsgeschichte der Genitalien" was published in 1830 containing the clear picture of the development of the mammalian uterus.





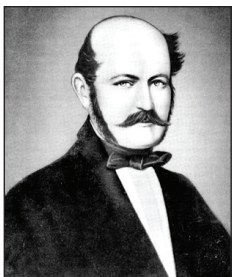
## 12. Sir James Young Simpson (1811-1870)

Sir James Young Simpson, a Scottish obstetrician was the first physician to demonstrate anaesthetic properties of chloroform and popularised its use. Sir James Young Simpson designed various obstetric forceps including Simpson's obstetric forceps, long and short. Simpson designed first the vacuum extractor for assisted vaginal birth in 1838 long before the useful ventouse designed by Malmstrom from Sweden in 1954, but not popular. He also developed Simpson's uterine sound.



## 13. James Marion Sims (1813-1883)

James Marion Sims, an American gynaecologist is known as the founder of modern gynaecology. He devised a vaginal speculum in 1845. Later (1852) he started to use in repair of vesicovaginal fistula. He was pioneer in repair of VVF. **Sims' triad** means using silver wire suture (Sims' silver wire) to avoid sepsis using Sims' vaginal speculum and in Sims position.



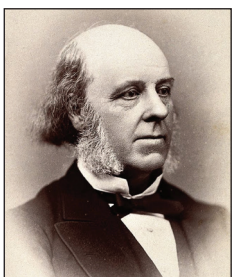
## 14. Ignac Fulop Semmelweis (1818-1865)

Semmelweis, a Hungarian Physician introduced the hand washing of the obstetricians and midwives in 1847 by using chloride or lime to prevent puerperal fever. The technique was known as Semmelweis method to prevent puerperal fever. This handwashing technique reduced the maternal death from sepsis dramatically. The trio of Louis Pasteur (1822–1895), father of microbiology, Joseph Lister (1827–1912), founder of modern surgery and Ignaz Semmelweis (1818–1865), are the architects of the modern antiseptic technique.



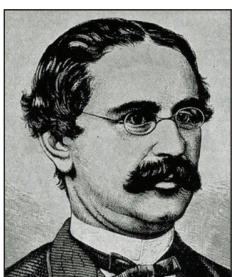
## 15. Louis Pasteur (1822-1895)

Not being a gynaecologist Louis Pasteur, a professor of chemistry is remembered for his enormous contribution in bacteriology and surgical antiseptis. His work established the basis of antiseptis in surgery. He explained the cause of puerperal fever by bacterial colony. He is the first chemist to culture streptococci. almost 90 years after Jenner initiated immunization with smallpox vaccine, Pasteur developed another vaccine—the first vaccine against rabies. He administered the rabies vaccine in 1885 and developed a live attenuated vaccine for anthrax in 1888 and used for sheep and cattle.



## 16. John Braxton Hicks (1823-1897)

Born in Sussex, England John Braxton Hicks identified painless rhythmic uterine contractions from third month onwards during pregnancy which is known as '**Braxton Hicks sign**' (1871). He also introduced the internal podalic version.



## 17. Otto Spiegelberg (1830-1881)

Spiegelberg was the very famous writer in obstetrics and Gynaecology. He had lot of works on ovarian follicle, corpus luteum, inversion of uterus and ovarian pregnancy. He introduced four criteria popularly called "**Spiegelberg criteria**" for diagnosis of ovarian pregnancy.



### 18. Alfred Hegar (1830-1914)

Alfred Hegar, born in Darmstadt, Germany is remembered for '**Hegar's Sign**' and '**Hegar's Dilators**'. He was professor of obstetrics and gynaecology at Freiburg, where he remained for 40 years until his retirement in 1904. Hegar's sign, a selective softening of the uterus in the region of the lower segment, as a new and certain diagnostic early sign of pregnancy was actually described first by C. Reinl, one of Hegar's assistants, who published this observation in 1884. Hegar's curved metal series of cervical dilators was published in 1879 in an article by Tchoudowski. Hegar's original dilator was solid, cylindrical dilators made out of ebonite with conically tapering ends with a flattened handle.



### 19. Ladwig Bandl (1842 – 1892)

Ladwig Bandl was an Austrian obstetrician and is remembered for his description of the "pathologic retraction ring", or '**Bandl's ring**', in between the thinned lower segment and contracted upper segment of the uterus, feature of obstructed labour. He discovered this ring in 1870 while still a student to perform autopsy in a gravid woman who made suicide during advanced labour. He also first recognized in 1875 that rupture is almost confined to lower uterine segment of uterus.



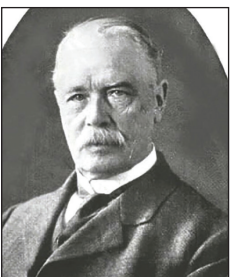
### 20. Edoardo Porro (1842-1902)

Eduardo Porro from Italy introduced the subtotal or supravaginal hysterectomy in obstetric surgery in 1876 to lower the death rate from cesarean section (CS). Before that cesarean delivery was almost fatal. Porro published in 1876 the first case report of survival of woman who was undergone hysterectomy following cesarean delivery of a large baby (3.300 Kg female). Cesarean hysterectomy is referred to as 'Porro operation' by many.



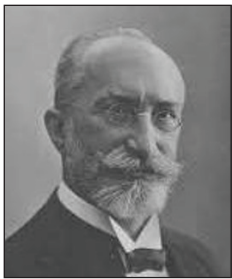
### 21. Adolphe Pinard (1844-1934)

Adolphe Pinard, a French obstetrician was a pioneer for working on abdominal palpation and version. He first developed fetal stethoscope in 1889, called 'Pinard Fetal stethoscope'



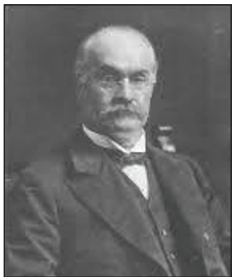
### 22. Friedrich Trendelenburg (1844-1924)

Born in Berlin Friedrich Trendelenburg was a great contributor of modern surgical practice as innovator and surgeon. '**Trendelenburg position**', a pelvis-up, head-down position which is of great use in diagnostic and surgical practice is only after his name. He introduced endotracheal anaesthesia and proposed pulmonary embolectomy.



### 23. Christian Gerhard Leopold (1846-1912)

Christian Gerhard Leopold famous for “**Leopold maneuver**” of obstetrics abdominal palpation, was born in Meczanc, Saxony. He was assistant to Crede, whose daughter he later married, and he was appointed as instructor of midwives. He had more than 120 publications. Leopold was the first in Germany to perform ovariectomy in vaginal route and did the first classical caesarean section in that country with survival of both mother and baby. In 1890 he published a paper where the manoeuvres of Leopold were outlined, the details of which were described in the fifth edition of the Crede-Leopold textbook.



### 24. Friedrich Schauta (1849-1919)

Friedrich Schauta, was an Austrian surgeon and gynaecologist born in Vienna. Schauta is famous for introducing an operation for cancer of uterus in which the uterus and ovaries are removed by way of the vagina (Schauta-Stoeckel operation)



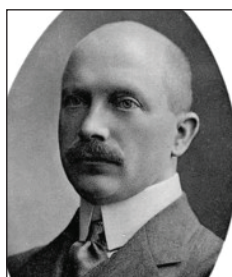
### 25. Dührssen Alfred (1862-1933)

Dührssen Alfred is regarded as one of the founders of modern surgical gynaecology. He developed a technique by incision over cervix for facilitating labour in cervical dystocia, known as ‘**Dührssen’s incision**’.



### 26. Hermann Johannes Pfannenstiel (1862–1909)

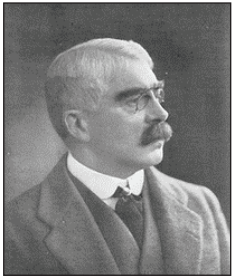
Born in Berlin Hermann J Pfannenstiel described a low transverse abdominal incision, called ‘**Pfannenstiel incision**’ in 1900, to prevent incisional hernia. It is the incision of choice for gynaecology and genitourinary procedures.



### 27. Ernst Wertheim (1864 – 1920)

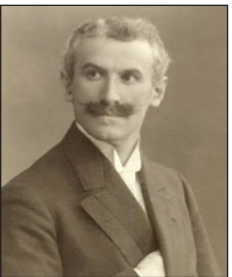
Ernst Wertheim, an Austria’s most famous gynaecologist first performed radical hysterectomy (pan hysterectomy, removal of parametrium, upper part of vagina and removal of lymph nodes) for cervical cancer in 1898. After his name the name of the operation was ‘**Wertheim operation**’. He did more than 1300 this type of operations between 1900- 1910.





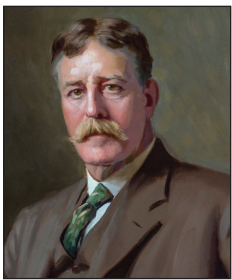
### 28. William Edward Fothergill (1865-1926)

Archibald Donald (1860-1937)- Manchester is a city of England famous for development of surgery for uterine prolapse. “The Manchester Operation” includes a double colporrhaphy (anterior and posterior) with amputation of the cervix and suturing of the deep structures. This operation, is still referred to occasionally as the Donald or Fothergill procedure, more often as “**Fothergill’s operation**”. Surgery of the uterine prolapse was first published in 1908 both by Fothergill and Donand separately. Manchester is situated in industrial districts, polluting the atmosphere with bronchial irritants and cough was endemic to the area. The cases of uterine prolapse were a major interest of Manchester gynaecologists.



### 29. Ferdinand Strassmann (1866-1938)

Ferdinand Strassmann was leading specialist of plastic surgery for female genital tract. ‘**Strassmann unification operation**’ of uterine anomaly (bicornuate uterus) is very popular surgical technique.



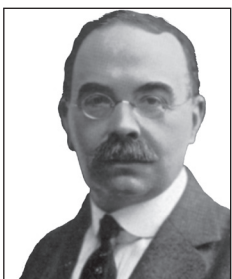
### 30. John Whitridge Williams (1866-1931)

John Whitridge Williams, of Baltimore was pioneer of academic obstetrics. Williams was the founder of academic obstetrics in the United States and with his textbook was the recognised leader of this discipline in America during the first 30 years of the 20th century. His text book of obstetrics , “Williams obstetrics” was first published in 1902 by D. Appleton and company. Twenty sixth edition is published in 2022 by McGraw-Hill Education and most popular book in obstetrics in world till the date.



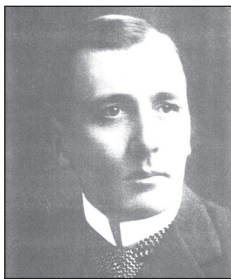
### 31. Sir Kedarnath Das (1867-1936)

Sir Kedarnath Das was a great obstetrician from Calcutta, India. He designed a special type of forceps, “Bengal forceps” (1912) suitable for Indian babies. He wrote a treatise on obstetric forceps titled “Obstetric forceps – its history and evolution” (1929). His collection of hundreds of obstetric forceps of different models from various parts of the world have been kept in Forceps gallery at R G Kar Medical college, Kolkata. Graduated from Medical college, Calcutta he worked in both Medical college, Calcutta and Cambel Medical School (now called NRS Medical College, Kolkata) and worked as Professor and later Principal, Carmichael Medical College (now R G Kar Medical College, Kolkata) till his sudden demise.



### 32. Ralph Hayward Pomeroy (1867-1925)

Ralph Hayward Pomeroy was an American gynecologist who is famous for the development of female sterilization technique, popularly called ‘**Pomeroy method of tubal ligation**’. Pomeroy developed his technique but never reported or published in his life time. Bishop and Nelms, his associates presented the procedure in 1929. In this procedure a loop is created in each fallopian tube, tied with cat gut and the loop is cut.



### 33. John Martin Munro Kerr (1868 – 1960)

Munro Kerr, Professor of midwifery at the university of Glasgo he published to great success “Operative Midwifery” in 1908, popularly called later “Munro Kerr operative Obstetrics”. He popularized the modern technique of caesarean section by curved lower uterine segment transverse incision in 1926.



### 34. Friedrich Ernst Krukenberg (1871-1946)

Friedrich Ernst Krukenberg bom in Halle, Germany is famous for the extensive description of ‘**Krukenberg tumour**’ of ovary. In his six-case series of bilateral ovarian tumor was published in 1896 in a paper entitled “Ueber das Fibrosarcoma ovarii microcellular (carcinomatodes)”. He described it as a primary malignant neoplasm of the ovary. Later, the origin of tumour was reviewed as secondary.



### 35. Victor Bonney (1872–1953)

William Francis Victor Bonney, a British gynecological surgeon is primarily remembered for the invention of an antiseptic solution known as “Bonney’s blue”. He preferred to do conservative surgery instead of hysterectomy in women of reproductive age. He is famous for his myomectomy in uterine fibroid. He developed a surgical clamp to reduce blood loss, known as ‘**Boney’s myomectomy clamp**’. He became experienced in the radical extended Wertheim hysterectomy for treating cancer cervix., He authored illustrated ‘A Textbook of Gynaecological Surgery’ (1911), still in print as ‘Bonney’s Gynaecological Surgery’.



### 36. Alexandre Couvelaire (1873-1948)

Alexandre Couvelaire was born in Bourg, France and became professor in the University of Paris and famous for dealing the cases of antepartum hamorrhage. On describing uteroplacental apoplexy on premature separation of placenta Alexandre Couvelaire first described in detail the extensive hemorrhage into the myometrium, ovaries, broad ligaments, and pelvic peritoneum that occasionally found. The typical appearance of uterus with subserosal ecchymoses is referred to as ‘**Couvelaire uterus**’ after his name.



### 37. Alfred Baker Spalding (1874—1942)

Alfred Spalding was born in Atchison, Kansas. His Sign of Fetal Death in Utero is x-ray appearance of ‘overriding of the cranial bones’. Although generally known as ‘**Spalding’s sign**’, credit for its discovery should be divided with D. A. Homer. Both of them published their observations in successive issues of the same journal; Spalding in June, 1922 and Homer in July, 1922.





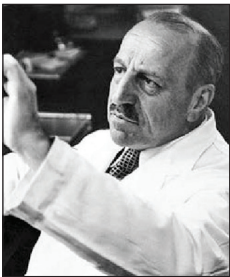
### 38. Margarate Sanger (Margaret Louise Higgins) (1879-1966)

Margarate Sanger was an American birth control activist. She opened the first birth control clinic in the United States and established organizations that evolved into the 'Planned Parenthood Federation of America'. A nurse by profession Margarate dreamt of "magic pill" in 1912 and imprisoned for birth control movement. She was prosecuted for her book *Family Limitation* under the Combstock Act in 1914. Sanger died in 1966 at aged 86, about a year after the US Supreme Court's landmark decision which legalized birth control in the United States. Enovid, first birth control pill also gained approval from the FDA for contraceptive use in 1960 before her death.



### 39. Ernst Grafenberg (1881-1957)

Ernst Grafenberg, a German gynecologist developed first the flexible intrauterine contraceptive ring called the "**Gräfenberg ring**" and introduced in 1929. It was one of the first intrauterine devices that effectively prevented pregnancy without causing infection, and it became the forerunner of all modern intrauterine devices, or IUDs. Initially he used only loops of silk threads, later used coiled silver wire wrapped with silk. The idea of intrauterine contraceptive device came from the observation that Arab camel drivers prevented their female camels from becoming pregnant and aggressive by inserting stones into the uterus.



### 40. George Nicholas Papanicolaou (1883-1962)

George Nicholas Papanicolaou was born in Greece, later shifted to USA. He developed cervico-vaginal smear test. An illustrated manual 'Diagnosis of uterine cancer by the vaginal smear' was written in 1943 along with Herbert Traut. He also published 'Atlas of Exfoliative cytology' in 1954. '**Papanicolaou test (PAP smear)**' is routinely used now as screening of cervical cancer.



### 41. Irving Freiler. Stein, Sr (1887-1976)

Irving F. Stein, an American gynaecologist along with Michael Leo. Leventhal described '**Stein-Leventhal Syndrome**' in 1935. The syndrome was later known as polycystic ovarian syndrome. Stein also helped to establish a treatment with surgical removal of ovarian tissues.



### 42. Walter Schiller (1887-1960)

Walter Schiller, an American pathologist worked primarily in the field of gynaecological cancer, and described '**Schiller's test**' to diagnose early cervical cancer in women. In 1928, Schiller invented the test which was known as the Schiller test to diagnose cervical cancer using Lugol's solution, or a potassium iodide solution. Schiller observed solution-stained healthy cervix a temporary dark brown colour while a cancerous cervix would not be stained due to absence of glycogen.



#### 43. John Rock (1890-1984)

John Rock, an American Gynecologist and Professor of Harvard Medical school, is pioneer in the developing of first oral contraceptives. John Rock and Gregory Pincus in 1955, first gave successful human trial of progestogens in 1954. In 1960, Enovid (combination of progestogen and oestrogen) gained approval from the FDA for contraceptive use.



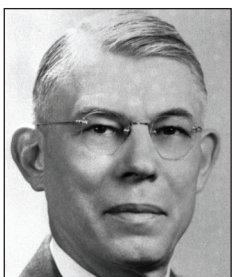
#### 44. Joe Vincet Meigs (1892-1963)

Joe Vincet Meigs was an American gynecologist, modified Wertheim procedure of radical hysterectomy in cancer cervix. in 1957 he described '**Meigs' syndrome**' which is the association of hydrothorax, ascites and ovarian fibroma



#### 45. Henry Hubert Turner (1892-1970)

Henry Hubert Turner born in Harrisburg, illions described 'pterygo-nuchal infantilism syndrome' in 1938, later popularly known as '**Turner syndrome**'. Turner syndrome is characterized by short stature, with no secondary characters, streak ovaries, small uterus, patent vagina with multiple physical stigmas. Later C.E. Ford noticed these patients commonly to have 45 XO chromosomes when sex chromosome analysis became available in 1950.



#### 46. Edward A. Doisy (1893-1986)

Edward Doisy, an organic biochemist was first to isolate oestrogen in 1929 along with Edgar Allen. Allen provided follicular fluid from sows and Doisy purified the estrogenic activity. Doisy crystallized estrone and presented this finding at the 13th International Physiologic Congress in Boston in 1929



#### 47. Subodh Mitra (1896-1961)

Subodh Mitra, an eminent obstetrician and Gynaecologist from Kolkata, India, is the founder of the "**Mitra operation**" – a special type of radical surgery in cancer cervix (Extended Radical Vaginal hysterectomy with extraperitoneal lymphadenectomy). In his later life he became Professor of Obstetrics and Gynecology and Director at R G Kar Medical College, Kolkata and later appointed as Vice-chancellor of the University of Calcutta in 1960. N N Roy Chowdhury, his son-in law, an eminent gynaecologist popularised 'Mitra operation'.



#### 48. Vithal Nagesh Shirodkar (1899-1973)

V N Shirodkar from India, is remembered for Cervical cerclage reported in 1955, known as '**Shirodkar's operation**' where sutures pass through the walls of the cervix. Cervical cerclage is given in cervical incompetence to prevent preterm birth.



#### 49. Balachandra D. Pattawardhan (1900-1983)

Patwardhan, born in Maharashtra is famous for his technique (**Patwardhan technique**) of delivering impacted head during caesarean delivery, first delivering the upper limbs, then the back, lower limbs and finally the head.



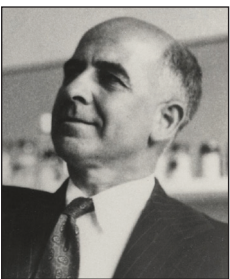
#### 50. Michael Leo Leventhal (1901-1971)

Michael Leo Leventhal, a Chicago born physician along with Irving Stein (1887-1976) described a syndrome, '**Stein-Leventhal syndrome**'. They published a paper 'Amenorrhoea associated with bilateral polycystic ovaries' in 1935. Obesity and hirsutism are common association. They reported case series of seven cases. They also suggested wedge resection of the ovaries which yield normal cyclical menstruation and two women conceived in their series.



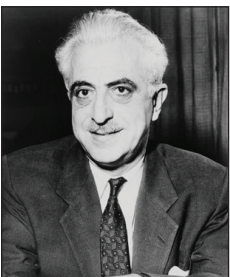
#### 51. Karl Schuchardt (1856-1901)

Karl Schuchardt, surgeon dedicated most of his life to the surgical treatment of cervical carcinoma. He improved the surgical access by enlarging the introitus with a particular perineotomy (pararectal incision) bearing his name known as '**Schuchardt incision**'.



#### 52. Russell Earl Marker (1902-1995)

Russel Marker was an American chemist discovered progestogens from plant Mexicans wild yam (diosgenin) in 1941. This eventually led to the development of the combined oral contraceptive pill and synthetic cortisone.



#### 53. Gregory Goodwin Pincus (1903-1967)

Gregory Goodwin Pincus was an American biologist and researcher who co-invented the combined oral contraceptives along with Jhon Rock. Pincus, along with M C Chang confirmed that progesterone would act as an inhibitor to ovulation. He first pointed out the progesterone as antioviulatory drug. Much before in 1934 he was able to perform successful invitro fertilization in rabbits.





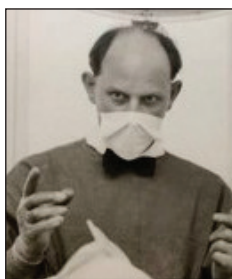
### 54. Virginia Apgar (1909-1974)

Virginia Apgar, an obstetric anaesthesiologist and director of Columbia university and is best known as the inventor of the **'APGAR score'** to quickly assess the health of a newborn child immediately after birth. In 1952, she developed the 10-point score comprising of five parameters; Colour of the skin(Appearance), Heart rate(Pulse rate), Grimace (response to stimulation), Activity (muscle tone) and Respiratory effort, each carrying 0 to 2 scores, total 10 score. A score above 7 indicates good condition. Score 3 or less at one-minute needs active resuscitation.



### 55. Ian Donald (1910-1987)

Ian Donald was a brilliant teacher and author of very famous text book 'Practical Obstetric problems'. He adapted ultrasound or 'sonar' for use in medicine. Donald served second world war from 1942 onwards and his task was to seek and to destroy German U-boats by using sonar.



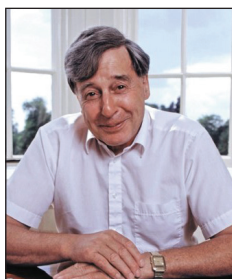
### 56. Tage Malmström (1911-1995)

Malmström, a Swedish obstetrician popularised the vacuum extractor or Ventouse, an obstetrical instrument for assisted vaginal delivery. Famous obstetrician James young Simpson had constructed a suction bell in the mid-19th century, but he never got to work satisfactorily. Malmstrom from Sweden modified it with a metal cup and a vacuum pump system and made it available after 1950s.



### 57. Patrick Steptoe (1913 – 1988)

Patrick Steptoe was an English obstetrician and gynaecologist and a pioneer of fertility treatment. He first wrote book on laparoscopy in English in 1967. Patrick Steptoe and Robert Edward created World's first test tube baby "Louise Brown," on July 25, 1978.



### 58. Robert Edward (1925 –2013)

Sir Robert Geoffrey Edwards was a British physiologist and pioneer in reproductive medicine and in-vitro fertilisation. Along with obstetrician and gynaecologist Patrick Steptoe and nurse Jean Purdy, Edwards successfully pioneered conception through IVF, which led to the birth of First test tube "Louise Brown" on July 25, 1978. Edwards was the founding Editor-in-Chief of Human Reproduction in 1986. He was awarded Nobel Prize in 2010.





### 59. Baidyanath Chakravarty (1928 -2022)

Baidyanath Chakravarty was excellent teacher, an extraordinary clinician and an outstanding researcher and the father of infertility, ART and reconstructive surgery of mullerian anomaly. He along with his team is the creator of third test tube baby in India delivered on 6th November 1986 at Kolkata. He delivered 5th baby in the world after correction of cervicovaginal atresia. He was close associate of Dr Subhas Mukherjee, creator of first test tube baby (IVF) in India and second in the world. He established Institution of Reproductive Medicine (IRM), Kolkata after his retirement as Professor, G&O, N R S Medical College, Kolkata. He had performed over 4,000 IVF procedures.



### 60. Subhas Mukherjee (1931-1981)

Subhas Mukherjee was professor of physiology of different Medical Colleges of West Bengal, India. He is the creator of first test tube baby (IVF) in India and second in the world, Durga (Kanupriya Agarwal) by name was born in October 3, 1978, just 67 days after the first IVF baby in World. Subhash Mukherjee committed suicide on 19 June 1981 as his work was denied by the then local Government and was not allowed to share his achievements with the international scientific community. The delivery of India's first scientifically documented test-tube baby (6 August 1986) was initially credited to Indira Hinduja and T.C. Anand Kumar (1936–2010). On checking the research papers T C Anand Kumar acknowledged that the first test tube baby born in India is by Subhas Mukherjee, not by them. His work was recognised long after his death.



### 61. Sir Ian Wilmut (1944-2023)

Ian Wilmut, a British scientist who led the team that cloned Dolly the Sheep in 1996. Dolly was the first mammal to be cloned from an adult cell, breaking barriers in science believed to be impossible. He died in 11th September 2023 at the age 79.

