

Twins, Rare Type of Twins, Siamese Twins, Super Twins and Multiple Births

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From time immemorial the twins, supertwins, siamese twins and multiple births have not only fascinated the primitive man but has captivated the attention of writers, novelists, artists, poets, dramatists, medical professionalists, embryologists, geneticists, research workers, psychologists, anthropologists and above all even the twins themselves. The literature is replete with the mistaken identity where the monozygotic twins (MZ) which are so similar in their morphological and genetical traits that they are mistaken not only by their friends, kith and kin and teachers but even by their own parents. The Hollywood and Bollywood had made a very lucrative business out of the identical twins by producing very many funny and enjoyable pictures like Hum Shakal (MZ males), Dil ne phir yad kya (MZ females), Pap aur pumya (MZ males), Sita aur Gita (MZ females), Gora aur Kala (MZ males), Pyar Ke Do Pal (MZ males), Gharam Khoon (MZ males). In Ramayan we know about Bali and Sugreev who were MZ brothers. Sumitra, the royal consort of Dasarath, was blessed with dizygotic twins (DZ) – Laxman and Shatrugun. According to Indian mythology Yamuna is the daughter of the Sun God and she is the twin sister of Yama – the famous God of death.

Although there are many types of twins, common and exceptionally rare discussed in this paper, yet in the scientific literature the mention is mostly made about monozygotic (MZ) and dizygotic (DZ) twins and their existence have been established for about a century (Price, 1950; Corner, 1955).

TWINS

Monozygotic Twins (MZ)

An adult female in her monthly cycle re-

Hebrew word for twin – te-om, etymologically is a 'match'. The word twins derives from stem 'twi', which is ancient German word 'twina' and 'twine' implying divided into two.

leases one mature ovum from either of the ovary which subsequently gets fertilised by a sperm leading to the formation of a zygote. In some exceptional cases this zygote undergoes a cleavage forming two foetuses which are genetically identical called monozygotic twins. Since they are very much identical they would be both either males or both females.

Dizygotic Twins (DZ)

Dizygotic twins as the very name suggest are produced when two mature ova either from a single ovary or one each from each ovary are released almost at the same time and both of these ova get fertilised by two different sperms giving rise to two foetuses which are not genetically identical. They are like the sibs although born at the same time. They may be both male, or both female, or a pair of male and a female. They will show the physical variation and the differences as is expected of the respective sibs.

Uniovular Dispermic Twins

Bulmer in his book '*The Biology of Twinning in Man*' (1970) has reported a possibility of another unusual type of twins and termed it as Uniovular Dispermic Twins. Sometimes rather rarely the spermatozoa may cause the ovum to undergo a cleavage before the fertilisation, may be through some chemical or mechanical influence and these ova on their subsequent fertilisation by two different sperms develop into twins. These twins without any doubt are DZ twins, nevertheless they would be genetically intermediate between MZ and DZ twins and would be genetically more similar to their mother. Since they have the common genes from their mother. Since this type of twins are produced by the cleavage of the ovum by the influence of the sperm its inheritance may be attributed to the father.

Primary Oocytary Twins

The occurrence of yet another type of twins is also possible. In the normal process of oogenesis the primary oocyte divides unequally into the secondary oocyte which is comparatively a large cell and a small cell called a polar body and which is defunct and has no role to play except to subdivide and produce two secondary defunct polar bodies. In unusual cases the primary oocyte divides equally to give rise to two secondary oocytes and subsequently to two ova. These two ova after their fertilisation by two different spermatozoa give rise to DZ twins. As both of these ova are produced from the same primary oocyte, they would be like the ova produced by different women and as such these twins would be genetically different and would be like DZ twins. The suggestion for such type of twins was given by Danforth (1916). It was Mijsberg (1957) who proposed the term primary oocytary twins.

Secondary Oocytary Twins

There exists still another type of twins called as secondary oocytary twins (Mijsberg, 1957). Normally the secondary oocyte divides unequally into a large cell called ovum and a second polar body which is non-functional. Rarely the secondary oocyte may give rise to two ova. These ova may get fertilised by two different sperms to produce DZ twins. These twins would not be genetically identical and would be like the ova produced by the same women.

Time-Lag Twins

In a normal young woman in her monthly cycle only one matured ovum descends down from any one of ovary and subsequently gets fertilised by a single sperm to develop into a foetus. However, in some rare cases two matured ova descend down either one each from each ovary or from a single ovary during the same monthly cycle and get fertilised by two different sperms to form two foetuses which ultimately lead to the birth of DZ twins generally at the same time. Rarely – once in a million – the two members of such twins are born within a gap of a few days. There are also in-

stances when two ova from two different monthly cycles form the DZ twins. They are termed as Time-Lag-Twins. Such twins, although rare, nevertheless have been reported from time to time from various countries of the globe. There are three sub types of such twins.

a. Time-Lag-Twins Born Within a Gap of a Few Days

These twins are the product of two ova from the same monthly cycle and are fertilized by two different sperms and ultimately developing into DZ twins. A few such instances have been reported viz., Beijing (1995) twins born within a gap of five days. London (1997) twins were born within a gap of 19 days, California (1998) twins were born within a gap of three weeks, Sambalpur (India) (1980) twins were born within a gap of 26 days.

b. Time-Lag-Twins Born Within a Gap of One or More Months

This type of twins are conceived during two different monthly cycles as they are born within a gap of one month or more than one month. London (1997) twins were born after a gap of one month. In Tivoli near Rome (1988) twins were born within a gap of six weeks. In Kathmandu Nepal (1978) the twins were born within a gap of two months.

Debbie Gilbert a 38 year old housewife from London (1997) is the sixth woman in the world to have conceived twins a month apart during two different monthly cycles. Evidently these twins are conceived during the different monthly cycles as they are the product of two ova matured from the two different monthly cycles and fertilized by two sperms.

Not only the twins, but even the time-lag-triplets have been cited. An extremely rare case reported in 1993, a congolese woman, who was unaware that she was carrying the triplets, gave birth to three babies on three consecutive days in three different villages in her three day walk covering a distance of 100 km.

c. Superfetation Twins

There can be a third type of time-lag-twins and the phenomenon is called superfetation. It is the fertilisation of the second ovum after

the onset of the pregnancy. In such situations both the foetuses would be at the different stages of the development in the uterus.

Superfecundity Twins

According to the Mosby's Medical Dictionary the superfecundation is the fertilisation of two or more ova released during the same menstrual cycle by spermatozoas from the same or different males during separate acts of sexual alliances by the same woman. In very rare cases a woman may carry two babies conceived at different times and naturally they are DZ twins. This happens when two mature ova are released in a short interval of time and are then fertilised by the sperms of same male on by the different males. Some very rare but interesting instances have been reported from time to time. Archer (1810) reported one such rare case. A white woman had a sexual alliance with a white male and with a Negro male within a short period of time. She delivered twins one of which was white, while the other was mulatto. Andreasi (1947) observed a case of a married woman who had an extra marital relations with another man and delivered DZ twins a boy and a girl. After the examination of their blood it was observed that the husband was the father of the boy and the other man has sired the girl. Kries and Galasch (1967) from Germany reported one interesting case of the paternity dispute involving DZ twins – a boy and a girl. On the basis of their blood group analysis and other morphological traits, the alleged man was the father of the girl, but not of the boy. On sustaining counselling the woman admitted of her sexual adventure with another man within a short interval of time and who proved to be the father of the boy. Terasaki (1978) from Los Angeles reported one such case of DZ twins when it came as a paternity dispute case. On the basis of tissue finger prints, he observed that two men were involved and the women ultimated admitted of having the sexual alliance within an interval of a short period.

Yet another such case reported is of twins fathered by two different men in 1992 from Dortmund (Germany). A 17 year old German girl had given birth to a pair of twins conceived by two different men. The alleged man

refused to admit the paternity. After genetic investigation it was found that the alleged man was the father of only one of the child. This young girl had two paramours and had the sexual alliances with both of them during the same period of her fertility. The girl refused to reveal about the other man.

Heterokaryotypic Monozygotic Twins

MZ twins are the product of a single ovum and a single sperm and are genetically identical in all the aspects. Both of them are either males or females. A very unusual type of MZ twins in which one is a male while the other a female has been reported by Turpin and Lejeune (1969). In this case both the members of the twins were of different sexes – a male and a female and chromosomally heterokaryotypic. A male normal with 46, XY and the female with 45, XO chromosome complement. The analysis of their blood group and serum types of their sibs and parents indicated that they were MZ twins, yet contrary to the expectation, one was a male while the other was a female. This possibly can be only one explanation for such type of twins. A matured ovum was fertilized by the sperm carrying Y-chromosome resulting in the male zygote with 46, XY chromosome complement. This male zygote had undergone a cleavage at an early stage. One of the cells in its early development lost its Y-chromosome and was left with XO, while the other was normal with XY chromosome. The former developed into a female but afflicted with Turner's Syndrome 45, XO, while the latter developed into a normal male with 46, XY. This in need is not only unusual but a very rare case of MZ twins in which both are of different sexes. The other heterokaryotypic MZ twins reported is a pair of female twins in which one is normal with 46, XX, while the other is with Down's Syndrome 47, XX, + G.

Foetus – in – Foetus Twins/Tumour Twins/Absorbed Twins

There is another variety of twins technically called as Foetus – in – Foetus twins, tumour twins or absorbed twins. These types of twins are extremely rare. Usually there appears a

swelling or a bulge in a abdomen of a person and this swelling gradually increases in size and becomes painful. The person carrying it considers it to be a tumour and on the medical advice opts for a surgical operation. The surgeon operating finds to his great surprise, that the tumour is in fact a foetus which has grown inside the person or child. This tumour foetus is actually the other twin which has been absorbed or is embedded in his tumour. The occurrence of such twins is once in a million births. From 1800 till now there are only 60 such cases reported and a few instances are given below. Kuala Lumpur (1969), Geneva (1973), South Korea (1981), New Delhi (1981), (1982), Hyderabad (1985), Turkey (1986), New Delhi (1986), Thiruvananthapuram (1985), New Delhi (1992), Hanoi (1995), London (1995), Ludiana (1996), Thanjavur (1997), Cuttack (1997), Columbia (1998).

There is yet one more rarest among the rare such cases and which made a medical history, reported from Delhi by Tucker (1992), who delivered three foetuses by surgery from a five month old infant. There are only five such cases, so far reported in the world and this is first such case from New Delhi (India).

Although it is difficult to explain the origin and occurrence of such foetus-in-foetus twins, nevertheless some logical summarizations could be made. When a zygote divides into two or more parts and develop into foetuses. Only one develops in a normal way, while the other foetuses get absorbed and remain embedded in it. These foetuses are actually the maternal parasitic twins. All these foetuses are of the same sex since these are product of a single ovum and a single sperm. Such twins foetuses remain dormant in an individual for many years and can go undetected.

Cloned Twins

Clone may be defined as a group of genetically identical cells or organisms derived from a single common cell or organism through mitosis (Mosby 1970). The possible origin of twins through Cloning got a boost only in July 1996 when Dolly – the sheep – was cloned in Roslin Institute in Edinburgh. By taking the nucleus from the cell of this

udder tissue of an adult sheep and by incorporating it in the egg of the sheep and allowing it grow and give birth to Dolly which was found to be normal in all aspects. Technically speaking this Dolly is a true genetic replica of the donor sheep. This is yet another types of genetically identical twins produced through cloning and is termed as cloned twins. Soon after the report of the cloning of the sheep Dolly, a fleet of experiments have been conducted leading of the successful cloning of the rat, the chimpanzee, the panda and various other animals. It is predicted that the production of the human being by cloning is also possible and is almost knocking the door, notwithstanding the involvement of numerous ethical issues.

There are innumerable advantages in the cloning of the animals, specially to recreate or the rebirth of extinct animals, and also to preserve, create and conserve the endangered species. May be in future we are able to preserve the somatic cells as mummies without the cells losing their potency on the similar grounds like blood banks, sperm banks, egg banks etc. and we could use these cells to recreate various species at will at some later date.

At this stage it is important to know a difference between the MZ twins and an individual produced by a clone. The MZ twins are the product of a single ovum and a single sperm and as such these twins have the genetic contribution of both of their parents and they would exhibit as much variation as is expected between the parents and progeny. The cloned individual, on the other hand, is the true genetic replica of a single adult donor and would be 100 per cent similar in all aspects to the donor.

On April 12, 1998 there appeared a very interesting and exciting news of the birth of the cloned twins born on different days to different mothers. At the face of it, it appears to be impossible but the veracity of this phenomenon could be confirmed from the same newspaper. In a fertility clinic, where eight clones have been made from one embryo with the knowledge of the parents. These clones were the genetic replica of the same original embryo and could be surrogated by eight different women at the same or at different times.

These cloned individuals would be so much similar in appearance and in their genetic constitutions of the original embryo, that any body, without knowing their background of origin, would take them to be the identical twins. As depicted in Mahabharata epic, 101 Kauravas were considered to be the clones and hence similar in their genetic constitution.

***In vitro* Fertilisation and Embryo Transplantation twins (IVF-ET)**

There can be another variety of twins produced through a technique called *in-vitro*-fertilisation and embryo transplantation. A woman is given Follicle Stimulating Hormone (FSH) and the matured ova are then collected. They are fertilised by sperms *in vitro*. The embryos are then transplanted in the womb of the woman desirous of having children. In order to have a good success, more than one embryos are transplanted in a woman. One can transplant these embryos in different women. The children thus born are DZ twins and they are born at a single time to a woman or different times to different women. For all practical purposes they are DZ twins because they are the product of different eggs and different sperms.

To have the twins by this IVF-ET a very interesting case has been reported in cattle. A single cow in Sabarmati Ashram, *Gaushala* in Gujarat in 1992 became the mother of 11 calves and it is a world record. The cow was made to super ovulate by using the hormonal injection and the ova thus collected were fertilised by the semen from the elite bull. All the embryos were then transplanted in the wombs of the foster cows. Out of 15, eleven healthy calves were delivered carrying the genes of the elite parents. All these calves were DZ twins born to different cows.

Chimera Twins

According to Mosby's Medical Dictionary Chimera is an organism carrying cell populations derived from two or more different zygotes of the same or of different species. In Greek Chimeras mean Monsters which are the mixture of two different species, e.g. a part goat and a part of any other animal. They are the product of a fusion of two zygotes who

have fused an early stage of development to give rise to a single individual. The best known examples cited are of the Mermaids, who appeared to be human in the upper part of their body, while their lower part resembles the fish. There are zygotic chimeras and post-zygotic chimeras. Zygotic chimera arise when the ovum is fertilised by a sperm and the fertilisation by another sperm of the first or second polar body from the same primary oocyte and their subsequent fusion leading to the formation of a single individual. Post-zygotic chimeras on the other hand, are formed when two ova are fertilised by two different sperms and the subsequent fusion of these two zygotes at very early stage of their development forming a single individual. Chimeras are usually observed in IVF-ET cases. This technique is resorted to in females who do not conceive normally or who are infertile. These females are given the fertility drugs to release more mature eggs. These eggs are then fertilised *in vitro* and the embryos are then implanted in the womb of the woman desiring to have children. In order to have a good success two or more than two embryos are implanted in the womb of a woman. In the normal course of development twins or triplets or may be more children are born. The children by such a technique are called as Test Tube Babies. The first such case of Test Tube Baby was successful in 1978. In exceptionally rare cases two growing embryos of the opposite sexes fuse together to give rise to chimera.

There is a variation in DZ twins and chimeras. DZ twins are produce of two ova fertilised by two different sperms and as such they are two different individual like sibs, whereas the chimera although formed in the same way as DZ twins, the two zygotes fuse together at a very early stage of their development giving rise to only one individual and such twins are technically chimera twins. Lillie (1971) has provided the best example of Chimeras in cattle. In case these chimera twins are of opposite sex, the male is normal, while the female becomes sterile free martin due to the free flow of the sex hormone from the male twin. The male twin inhibits the differentiation of the female sexual organ. Such free martins have been reported from sheep also (Storment et al.,

1953). It has been observed that unlike sexed human chimera twins are very much fertile and sexually normal. An extremely rare case of human chimera has been reported from Washington in January 1998. A British woman who opted for IVF-ET gave birth to an infant showing the sexual organs of both the sexes. It is suspected that the two embryos implanted simultaneously in the womb of the woman had fused - a highly unusual occurrence. In the situation like IVF-ET the implanting of multiple embryos is a usual procedure to ensure the successful pregnancy. In this case three such embryos were planted, one of them aborted, while the remaining two in their process of development fused giving rise to an individual with two different cell lines with different chromosome number.

The occurrence of mosaic individual (Race and Sanger, 1968) with two distinct cell lines though rare, have been reported and must have originated from the fertilisation of an ovum by the two spermatozoa. The first such case where a girl with hazel left eye and a brown right eye has come to light and she showed two types of cells XX and XXY and two different blood groups. This genetic difference must have cause from the father and two sperms must have been responsible for such a situation.

There is an etiological variation between siamese twins and chimeras. The siamese twins are the product of a single ovum fertilised by a single sperm. This zygote normally undergoes a division giving rise to two genetically identical twins called MZ twins. Some times the separation of the Zygote forming the MZ is not complete but they remain joined at various parts of the body. Some remain joined head to head, thoracic to thoracic etc. Chimeras on the contrary are the product of the fusion of two zygotes of the same or of different species.

Some of the interesting cases of chimeras are cited below

- a. In 1972 the author had encountered a dog who had one blue and the other brown eye. The dog appeared to be a mosaic bestowed with different cell lines.
- b. In 1973 it is reported a shepherd dog which showed both the eyes with different colours

- blue or grey. The dog appears to be a mosaic.
- c. A pet goat in Germany in 1977 gave birth to an animal that appeared half sheep and half goat. It is a cross which is considered to be impossible.
- d. In Ludhiana in 1979 a female calf was born with eight legs. This freak calf infact are twin calves which have fused in their very early stage of development.
- e. In 1979 in Katni a calf with two heads, two mouths and four ears was born to a cow. In this case also it appears the fusion of two zygotes at a very early stage of development.
- f. In Norway in 1985 a creature was born who is suspected to be a hybrid between a sheep and a goat.
- g. Ten pupils of Idaw Primary School (Nigeria) in 1985 lost their lives in the stampede following the appearance of a Mermaid - a creature with upper half of human and the lower half of a fish.
- h. In Tasmania (1985) an animal endowed with the head of a wolf, the stripes of a tiger and a pouch like Kangaroo has been sighted and the efforts are made to trap it for further study.
- i. In Danapur (Bihar) in 1988 a baby was born showing a protruding nose comparable to the elephant God Genesha. These are the features of two different species - human being and an animal.
- j. In Belgrade in 1988 a calf was born showing the body like any other calf and with the ass like face.
- k. In Thanjavur in 1991 a rare Cobra was caught with its hood resembling the human face. Its hood showed two black dots resembling the eyes with the eyebrows mark on the top of the eyes and a mark like nose and mouth giving an appearance of a human face.
- l. In Thanjavur in 1992 a freak calf was born showing eight legs, four ears, two tails but only one head. This appears to be fusion of two zygotes at a very early stage of their development.
- m. A baby resembling a fish was born to a syrian woman in Demrescus in 1993. It showed a great resemblance to a fish particularly in the face, eyes and skin.

- n. In 1996 it is reported about the 'Swimming cats of Turkey'. A native breed of white cat shows one blue eye while the other is yellow.
- o. A very typical but interesting case of chimeras twins has been reported in 1998 from Washington published in the *New England Journal of Medicine*. A British woman in the process of IVF - ET gave birth to an infant show the sex organs of both male as well of a female. In the IVF - ET usually more than one embryos are implanted simultaneously in the womb of a woman. In this case two embryos had fused at a very early stage of their development showing the sex organs of male as well of a female in the same infant.
- p. The ancient sphinx at Gaza in Egypt is a symbolic chimera showing lion bodied and human head. It has recently been unveiled by the Egyptian president after 10 years after the necessary repairs.

Siamese Twins/Conjoined Twins/ Double Monsters/ Freak Twins

In a monthly cycle the ovary of an adult woman releases a single mature ovum from either of the ovary, which on its subsequent fertilisation by a spermatozoa forms a zygote. Sometimes this zygote undergoes a cleavage at an early stage of its development leading to the formation of two foetuses which are genetically identical called MZ twins. In some rare, cases which is 1 in 50,000, the cleavage is not complete and the foetuses thus formed remain physically united at birth. They may be united superficially at the umbilical vessel, or it may be at their internal organs. When the cleavage of an egg or of an embryo forming two identical twins is not complete, the twins may be born who are joint at their chest, heads shoulders. Such twins are known as siamese twins or conjoined twins or freak twins. In worst cases the embryonic separation is only partial resulting the individuals showing two heads and one body, or one body and four arms and four legs and hence they are also known as double monsters. A very few of such twins survive but now with the modern technology the chances for their survival after a complex surgery has brighten up as they have been suc-

cessfully separated. These separated twins are very similar to each other as they are the product of a single ovum and a single sperm. By and large a majority of the siamese twins are still-born or die within a short time or their birth.

The earliest known case of siamese twins is reported in 1600A.D. But the most popular known case is that of Eng and Cheng-two males conjoined twins born in 1811 from the country Siam (now Thailand) from which the term siamese has been derived. These twins remained joined by a ligment at their breast bone. They remained active and healthy and got married to two sisters. Eng had eleven children - six boys and five girls. While Chang - Sired ten children - three boys and seven girls. It is difficult to think how embracing it would had been when three of four would have been in the same bed during the time of their marital bliss.

Following are some of the conjoined twins which were successfully surgically operated.

- a. Siamese twins girls born in Bullandshahr in 1969 had a big chunk of liver joined by the tissue was operated and the twins separated in Delhi.
- b. In Lucknow in 1984 a pair of male siamese twins were separated. They were joined at the umbilical cord and had a common bladder and intestine.
- c. In New Delhi in 1988 two six-month-old conjoined girl babies were surgically separated in AIIMS.
- d. In 1988 in Bombay the siamese twins were born to the wife of Indian Navy Sailor. These males twins had a common heart, spleen and a liver with other congenital heart defects. The Doctors were considering to save one and sacrificing the other but both of them died before any medical help could be rendered.
- e. In 1994 in SouthAfrica a team of Doctors successfully operated the siamese twin girls which were joined at the back of the head. It was first such case in the country.
- f. In Hanoi in 1995 the Doctors were faced with the first recorded case of siamese twins joined at thorax and they shared a common heart and liver with congenital heart problems.

- g. In Manchester in 1995 siamese twin girls which were joined from breastbone to naval were delivered by a caesarian operation in the hospital.
- h. In San Diego in 1996 a team of Doctors were trying to assess whether a week-old siamese twin girls joined at chest could be operated and separated.
- i. In 1996 at Ludhiana the Doctors at Christian Medical college surgically separated the siamese twin sisters joined at their abdominal region.

There are a few cases where siamese twins are born with more than one head and more hands and legs than normal individual. They are referred as double monsters.

- a. In 1979 in salt Lake city a siamese twin girls were born which were joined at the top of their heads and were successfully operated and separated.
- b. In 1988 in Baltimore (USA) the siamese twin brothers which were joined head to head were surgically operated and separated.
- c. In Delhi in 1990 the siamese twins which had joined head top-to-top were surgically separated.
- d. In 1994 at Karachi (Pakistan) the siamese twin girls were joined at head to head and were sent to Canada for their operation at the cost of the Government.
- e. In Salt Lake in city in 1996 a team of Doctors surgically separated 11-month-old siamese twins girls, who were joined at the tops of their heads.
- f. In America in 1996 a conjoined twin girls were reported sharing pelvis and legs. Technically called dicephalus twins and there are only four such sets of surviving twins in history. Looking at these twins it is impossible to separate them and any attempt to separate them surgically involves the greatest risk.
- g. In Johannesburg in 1998 a team of Doctors successfully separated the siamese twin boys after marathon operation. They were joined at the tops of their heads.
- h. In Barreilly in 1998 a woman gave birth to siamese twins who were joined at their abdomen and showed four hands and three legs.

Although all the siamese twins face many problems when they remain joined, nevertheless there are some siamese twins which have remained joined and had a successful and very active life and the best example of Eng and Cheng born in Siam in 1811 has already been narrated in this paper. There are other couple of such successful siamese twins. In Compton (California) in 1987 siamese twin brothers joined at their heads, left home for a new life as 38 year old college students. In 1993 in Long Beach there is report of rare siamese twin sisters leading on active lives died at the age of 43. These twins have been taking classes at the Compton community college. They were cranioccephalus twins, one of the rarest type of siamese twins. They had separate brains, separate personalities and other organs, but shared a common circulatory system.

Multiple Birth: Triplets, Quadruplets, Quintuplets, Sexuplets and Polyplets

Multiple births other than twins have also been reported from time to time from various countries of the globe, although they are rare. The incidences become rare, and rarest as we move from twins to nonuplets. In one of the rarest case at medical history the doctors in Rome in 1971 removed 15 fetuses - 10 females and five males - from a womb of a 35 years women. All these 15 fetuses were perfectly formed but all of them died due to shortage of space. This blessed woman already had a daughter of eight year old and had undertaken the hormone treatment. The multiple births like triplets, quadruplets etc. are possible when either a zygote divides forming MZ twins, or it could be due to the release of two or more than two mature ova getting fertilized by different sperms at the same time. Thus the triplets may be MZ twins or the mixture of MZ or DZ twins and likewise the quadruplets and quintuplets. There is another possibility when a woman undertakes the fertility treatment. The follicle stimulating hormone (FSH) causes the release of many mature ova at the same time leading to the consequence of multiple fetuses. FSH treatments are undertaken specially when the married woman who has not

conceived or who has desire to conceive and have children. Some females are prolific in producing multiple foetuses, viz. Argentine quintuplets were the product of five ova fertilised by the different sperms and hence DZ twins. There are also females who produce only one mature ovum in their monthly cycle and soon after the fertilization by a single sperm the zygote undergoes a number of cleavages at a very early stage to form multiple foetuses, viz. Dionnes quintuplets. They were the product of one ovum and one sperm and hence genetically MZ twins.

The tendency of twinning and multiple births seems to run in families and can be attributed to the genes. Once the female has twins, the chances for the repeat twins are several times more as compared to the females who never had twins earlier. Devenport (1919) has reported about a woman who was married three times and had twins and multiple births by all the three husbands. Her pregnancies account seven pairs of twins, five sets of triplets and five sets of quadruplets.

A woman in her life time can normally hope to have a couple of dozen birth although the world record was 69 children (TOI, 1996), many of whom were triplets. As mentioned earlier there may be some gene responsible which stimulates the zygote to divide at an early stage of development. The presence of such stimulating genes leading to multiple births may be in both the males as well as females.

There are many old accounts in the history of twins multiple births and among them there is one such fantastic account given in 1276 A.D. about a Dutch countess - Margarete Henneberg who is reported have delivered 365 children - all like mice, one on every day - 182 were males, 182 females while the remaining odd one was reported to be a hermaphrodite. The bishop of Utrecht baptised all of them. All the males were named as John, while all the females Elizabeth. The name of hermaphro-

dite has not been recorded. It is also recorded that soon after their baptism, all died included the mother. The other same type of the story is about Anne Hutchinson, who in 1638 was banished from Massachusetts Bay for she gave birth to thirty monsters at one time.

KEYWORDS Twins Siamese. Twins Rare. Twins Freak. Twins Chimeras. Multiple Births.

ABSTRACT Twins and multiple births have captivated the attention of geneticists, novelists and even the common man from time immemorial. The commonly known types of twins are monozygotic and dizygotic twins. However, there are some rare types of twins less or never reported. The present paper discusses the possible origin of these twins, viz., time lag twins, heterokaryotypic MZ twins, cloned twins, IVF-ET twins, chimera twins, siamese twins and multiple births.

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