

1. Gynecologist. Clínica Montesur, Lima- Peru. Member Editorial Board, Peruvian Journal of Gynecology and Obstetrics. Orcid ID <https://orcid.org/0000-0003-3236-4741>
2. Professor Emeritus, Universidad Peruana Cayetano Heredia, Lima, Peru. President Ethics and Professional Qualification Commission, Peruvian Society of Obstetrics and Gynecology. Orcid ID: 0000-0001-6024-9455

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Corresponding author:

Alberto Ascenzo Palacio.

📍 Av. El Polo 505 Monterrico Surco, Lima Perú.

✉ adrech1@hotmail.com

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Human reproduction in Peru La reproducción humana en el Perú

Alberto Ascenzo Palacio¹, Luz Jefferson Cortez²

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ABSTRACT

We describe the history of the pioneers of human reproduction in Peru -the Peruvian Center of Marital Fertility and the Marital Infertility Clinic of Pavilion 5, Room 3 of the Gynecology Service of the Loayza Hospital- and how studies in this field evolved, as well as the academic life of the Peruvian Fertility Society, its foundation, its presidents and the great influence it had on Latin American reproduction. We observe the evolution of diagnoses and treatments from 1950 to the birth of the first baby conceived by in vitro fertilization and embryo transfer in England in 1978, and the subsequent implementation of this procedure and its variants in Peru and the world.
Key words: Fertility, Reproduction, In vitro fertilization.

RESUMEN

Se describe la historia de los pioneros de la reproducción humana en el Perú -el Centro Peruano de Fertilidad Matrimonial y el Consultorio de Infertilidad Matrimonial del Pabellón 5, Sala 3 del Servicio de Ginecología de Hospital Loayza- y cómo evolucionaron los estudios en este campo, así como, la vida académica de la Sociedad Peruana de Fertilidad, su fundación, sus presidentes y la gran influencia que tuvo en la reproducción latinoamericana. Observamos la evolución de los diagnósticos y tratamientos desde 1950 hasta el nacimiento del primer bebe concebido por fertilización in vitro y transferencia embrionaria en Inglaterra, en 1978, y la posterior implementación de este procedimiento y sus variantes en el Perú y el mundo.
Palabras clave. Fertilidad, Reproducción, Fertilización in vitro.

HISTORY

Prior to 1949, studies and treatments in human reproduction were practically unknown in Peru and the few doctors who treated infertility problems did so almost empirically. We can consider Dr. Lucas Molina, Dr. Alejandro Busalleu and Dr. Cesar Heraud⁽¹⁾ as pioneers in this field, who did what was humanly possible to try to help those who consulted for infertility problems, within the little that was known in the specialty,

The specialty of Human Reproduction in Peru and in Latin America is associated with the figure of Jorge Ascenzo Cabello, who after specializing in Buenos Aires - Argentina, returned to Peru in 1950 and began his daily work organizing the first infertility clinic in Peru, in the Department of Gynecology of the Central Police Hospital⁽²⁾.

The second clinic, in 1951, was formed by Dr. Alejandro Busalleu with Dr. Jorge Ascenzo Cabello and Dr. Vicente Chiong Chiang at the Lozada Clinic, later Clínica Italiana. At the request of Mrs. Rosalía Lavalle de Morales Macedo, a fertility clinic was inaugurated in 1952 in the grounds of the Clínica Hogar de la Madre, with the condition that in the mornings women who consulted for sterility would be attended free of charge "as long as they were married in church". In spite of complying with the agreement, Drs. Ascenzo and Chiong had to leave the Clínica Hogar de la Madre at the request and demand of the nuns who administered it, because they could not allow studies in which men were asked to masturbate to obtain a sperm sample⁽¹⁾.

For the aforementioned reason, the Peruvian Center for Marital Fertility was built and inaugurated on August 10, 1952. In subsequent years, Drs. Javier Hoyle Cox, Roberto Ruiz Gonzales, Rafael de la Puente Lanfranco, Heli Cancino Izaguirre and Alberto Ascenzo Palacio joined the Center⁽¹⁾.



In 1953, Dr. Carlos Muñoz Torcello, who had returned from a rotation in the infertility service of John's Hopkins Hospital, created the Marital Infertility Clinic in the Gynecology Service of the Hospital Arzobispo Loayza, which belonged to the Public Charity of Lima (it was later assigned to the Ministry of Health). This clinic was part of Ward 5, Room 3 and was the only one, for many decades, to provide specialized services to the low-income population suffering from infertility problems. In the beginning, there were problems with the nuns who administered the Hospital, because they did not look favorably on anything related to human fertility, even less if it was attended by men (during that time the Loayza Hospital was exclusively for the care of women). Dr. Muñoz Torcello's assistants were Dr. Víctor Díaz Huamán and Dr. Alberto Franco Valera, who had completed training periods in foreign centers. They had the support of the Gynecological Endocrinology Laboratory headed by Dr. Roger Guerra García, as well as the Radiology Department, whose head was Dr. Oscar Soto, and the Pathology Department, whose head was Dr. Javier Arias Stella. Subsequently, Marco García Hjarles, a biologist trained in andrology, was in charge of supporting the male factor, spermograms and sperm capacitation for homologous inseminations.

Before 1970, the infertility service of the Loayza Hospital had few technological resources. In that decade it received, as a donation, instruments for tubal surgery, including an optical microscope, which made it possible to perform these surgeries with acceptable results⁽³⁾. Later, an ultrasound scanner, two laparoscopes and a hysteroscope were received, which were among the first to be used in Peru and with which the study and treatment of infertility was improved.

The infertility service was rotated by third year obstetrics and gynecology residents from Cayetano Heredia and San Marcos Universities. In 1973, Luz Jefferson Cortez, who completed a one-year fellowship in human infertility at the Margaret Sanger Research Bureau, New York, and a six-month rotation at the infertility service of John's Hopkins Hospital in Baltimore, among other specialized centers, was appointed as chief. Upon taking office, facilities were secured and granted for overseas rotations of the department's medical specialists. With the expansion of medical

personnel and material resources, the rotation in the specialty of residents from different Peruvian universities, located in different departments of Peru such as Ica, Arequipa, La Libertad, Cusco, began, many of whom upon returning to their respective places of work have implemented centers for the study and treatment of infertility. The scientific work at the Loayza Hospital continued within the canons of the different periods, and its experience is documented in undergraduate and graduate theses and scientific publications on the pathology, treatment and results in relation to the specialty, such as polycystic ovary syndrome, tubo-peritoneal factor, laparoscopic and hysteroscopic surgery, intrauterine insemination, endometriosis, among others. In 2005, the Human Reproduction Service was created, to which the Fertility Center belongs, being Dr. Luz Jefferson the eponymous. In 2015, gamete intrafallopian gamete transfer (GIFT) was initiated by Drs. Rechkemmer and Allemant and biologist Victor Benavides. At present, private institutions have made possible the training in in vitro fertilization, since the state still does not have the material facilities for treatments with these techniques. In relation to teaching, the diploma in infertility and gynecological endocrinology was created by the UPCH, being the coordinator Adolfo Rechkemmer.

INSTITUTIONAL LIFE

In 1952, a Peruvian physician, Dr. Jorge Ascenzo Cabello, was elected Secretary General of the International Fertility Association (IFA), today called IFFS, during the First World Fertility Congress in New York City, and was re-elected in the following congresses in Naples, Vienna, Stockholm, Rio de Janeiro and Tel Aviv, maintaining Peru's place on the board for 15 years⁽¹⁾.

On July 5, 1956, a group of physicians interested in infertility studies met and founded the Sociedad Peruana de Fertilidad Matrimonial which, after two years of continuous sessions, achieved official recognition on March 13, 1959, being its founding members doctors⁽¹⁾: Jorge Ascenzo Cabello, Abelardo Herrera Calmet, Benjamín Benavente Lozada, Javier Hoyle Cox, Gerardo Boisset Boisset, Julio Injoque Mandujano, Carlos Castellano Soile, Luis Magggiolo Roberts, Jorge Castillo Cáceres, Lucas Molina Navia, Javier Correa Miller, Carlos Muñoz Torcello, Vicente Chiong Chiang, Julio Muñoz Valdivieso, Rafael de la Puente Lan-



franco, Ricardo Pazos Freire, Víctor Díaz Huamán, Noe Ramírez Zapata, Alberto Franco Valera, Roberto Ruiz Gonzales, Benjamín Gamarra y Espinoza, Alberto Santos Astete, Oswaldo Ganoza Iturry, Horacio Tregear Castro, Manuel Gonzales del Riego, Eduardo Valdivia Ponce, Roberto Gordillo Delboi, Alfonso Zamorano Díaz Ufano. To all of them our recognition and gratitude.

The following is a list of the Past Presidents of the Sociedad Peruana de Fertilidad Matrimonial and the years they directed it:

Jorge Ascenzo Cabello (1957-1960)
 Rafael de la Puente Lanfranco (1961-1962)
 Javier Hoyle Cox (1963-1964)
 Roberto Ruiz Gonzales (1965-1966)
 Noé Ramírez Zapata (1967-1968)
 Heli Cancino Yzaguirre (1969-1970)
 Benjamín Benavente Lozada (1971-1972)
 Samoel Soihet Zonensein (1973-1975)
 Alberto Ascenzo Palacio (1976-1977)
 Abraham Ludmir Grinberg (1978-1979)
 José Lino Zamudio (1980-1981)
 Luis Mogrovejo Ugaz (1982-1983)
 José Pacheco Romero (1984-1985)
 Ladislao Prazak Krofta (1986-1987)
 Eduardo Maradiegue Méndez (1988-1989)
 Eduardo Laguna Suárez (1990-1991)
 Rodolfo Gonzales Enders (1992-1993)
 Víctor Díaz Huamán (1994-1995)
 Javier Ascenzo Aparicio (1996-1997)
 Nilo Loayza de la Flor (1998-1999)
 Luis Távara Orozco (2000-2001)

Jorge Izaguirre Sotomayor (2002-2003)
 Christian Beuermann Cancino (2004-2005)
 Augusto Ascenzo Aparicio (2006-2007)
 Jaime Seminario Agurto (2008-2009)
 Alfredo Celis López (2010-2011)
 Adolfo Rechkemmer Prieto (2012-2013)
 Fabricio Vizcarra Alosilla (2014-2015)
 Julio Víctor Díaz Pinillos (2016-2017)
 Luis Ernesto Escudero Velando (2018-2019)

It is interesting to note that practically 50% of the presidents of the Sociedad de Fertilidad Matrimonial have also been Presidents of the Peruvian Society of Obstetrics and Gynecology.

The current President of the Peruvian Fertility Society is Dr. Juan Allemant Mori, for the period 2020-2021.

It will be noted that the only presidency that lasted three years was that of Samoel Soihet and the reason was because the dictator Juan Velasco Alvarado closed and prohibited the operation of the Society, because he assumed that its work was family planning. For a year and a half, they fought to prove that it was the opposite, but they had to wait until Velasco was overthrown to obtain official recognition again.

Likewise, during the time of the dictator Velasco Alvarado, infertility activities were forbidden in the Hospital Loayza service, since it was believed that they were for birth control. The service, which belonged to a public hospital, saw its attention diminished, but then continued without major problems once the dictator was ousted.

A very important event in the life of our Sociedad Peruana de Fertilidad Matrimonial is to have managed to bring together in Lima in 1982 to Drs. Roberto Nicholson and Roberto Tozzini from Argentina, Elkin Lucena from Colombia, Iván Valencia Madero from Ecuador, Moisés Rearden from Uruguay, Jorge Ascenzo Cabello, Alberto Ascenzo Palacio and Luis Mogrovejo Ugaz from Peru, who decided to draft and approve the Statutes



of a human reproduction society and founded the Latin American Federation of Sterility and Fertility Societies (FLASEF).

Once again, Peru had official representation in an international federation, FLASEF, with Dr. Alberto Ascenzo Palacio, who held different positions on the boards of the Congresses of Lima, Santiago, Sao Paulo, Buenos Aires, Montevideo and Acapulco, where he was appointed President, maintaining for Peru 18 years of international presence.

The Sociedad Peruana de Fertilidad Matrimonial, during the presidency of Dr. Jose Pacheco Romero, in 1984, hosted in Lima the First Congress of the Latin American Federation of Sterility and Fertility Societies, of which Dr. Jorge Ascenzo Cabello was President.

During the presidency of Dr. Adolfo Rechkemper Prieto, the Society changed its name to Sociedad Peruana de Fertilidad, name that was officially recognized on January 24, 2013.

STUDIES AND TREATMENTS

In the early years, between 1950 and 1985, when a patient with fertility problems was received, medical history was taken, general clinical and gynecological examination was performed, basal temperature curve was carefully explained and, according to the menstrual cycle, basic fertility studies were scheduled. If the patient was in the follicular phase, hysterosalpingography was scheduled to study the characteristics of the uterus and fallopian tubes, looking for obstructions, stenosis, tubes in drumstick shape⁽³⁾ -suspicious of genital tuberculosis-, peritoneal adhesions, among others. Usually, after hysterosalpingography, a chymographic hystero-tubal persufflation with CO₂ or Rubin's test was performed, looking for spasms, stenosis or tubal obstructions.

During the ovulatory period, the cervical factor was evaluated by studying the quantity, color, elasticity, crystallization and presence of leukocytes in the mucus of the uterine cervix, as well as the Sims-Hühner postcoital test was done, to which, since 1985, an intrauterine collection was added to ensure the normality of the cervical factor.

In the second phase of the cycle, an endometrial biopsy was scheduled in order to determine the synchrony of endometrial maturation with the date of the menstrual cycle, to prove ovulation, anovulation or progesterone deficiency. The finding of endometritis, especially tuberculosis^(4,5), which was very frequent, was very important for the patient's prognosis.

In addition to these four examinations plus spermogram and hormonal studies, culdoscopy was added⁽⁶⁾, especially when a "normal sterile" woman was found, with suspicion of adhesions factor, polycystic ovarian disease, endometriosis. This examination had been practiced since 1950 and made it possible to confirm or rectify the diagnosis. In 1972, gynecological laparoscopy began to replace culdoscopy, and hysteroscopy in 1978.

Treatment in the early years was based on the diagnoses obtained.

The cervical factor was treated with estrogens and antibiotics to improve the cervical mucus, and with homologous inseminations with 1 mL intracervical and the rest in the cup or cervical cap, leaving the cup for up to 24 hours⁽²⁾. It was not until 1978 that the techniques of sperm washing or sperm capacitation, important for removing prostaglandins, protein antigens and germs, were improved. The better quality of the sample⁽⁷⁾ made it possible to perform intrauterine inseminations without complications.

The treatment of the uterine factor was surgical -to correct polyps, endometrial irregularities or endouterine synechiae-, formerly with blind uterine curettage with uncertain results and currently with operative hysteroscopy with better results.

The classic medical treatment of stenosed, spasming or obstructed tubes consisted first of administering antibiotics and anti-inflammatory drugs followed by hystero-tubal hydrotubations, which consisted of the application of an antibiotic, a corticosteroid, hyaluronidase and completed with 20 or 40 mL of physiological saline. This mixture was applied with gentle and constant pressure in the region to be cured⁽⁸⁾. The treatment was able to recover the tubes by almost 50%. When the



tubal problem could not be solved with medical treatment, the indication was surgical treatment, for release of adhesions, salpingolysis, salpingostomy or tubal reimplantation, all with very poor results despite the fact that over time magnifying lenses, microscopes and microsurgery were used, trying to improve the poor success rates obtained with tubal surgery⁽²⁾.

For the treatment of the ovarian factor, thyroid hormones, corticoids, roentgen stimulating therapy to the hypophysis and ovaries were used⁽⁹⁾, a therapeutic weapon that provided good results, but was left aside due to the fear of teratogenic effect on the product of conception. Around 1960, ovulation inducers began to be used - such as clomiphene citrate (CC), which is highly effective as an ovulation inducer, but the rate of gestation is not the same, fundamentally because of its anti-estrogenic action on the endometrium and, above all, on the cervical mucus - and heterologous gonadotrophins from pregnant mare's serum, which were discontinued because they presented adverse phenomena due to immunological phenomena. Likewise, menopausal gonadotrophins (hMG), ovarian wedge resection - widely used before the appearance of CC in polycystic ovarian disease and in Stein Leventhal syndrome⁽⁹⁾ - were also used, with different results because there was no defined criterion on the amount of ovarian mass to be removed; many times, the ovary was so reduced in volume that it was incapable of ovulating.

On July 25, 1978, an event occurred that would forever mark a turning point in assisted reproduction, a before and after in reproductive medicine. Louise Brown was born in England, the first baby conceived by in vitro fertilization and embryo transfer (IVF and ET), achieved by Drs. Robert Edwards and Patrick Steptoe. For this achievement, Steptoe was named Fellow of the Royal Society in 1987 and Edwards was awarded the Nobel Prize in Medicine and Physiology in 2010.

In Latin America, Dr. Elkin Lucena Quevedo reported in 1985 the birth of the first baby achieved by IVF and ET at the Colombian Fertility and Sterility Center (Cecolfes), and the same year and a few days apart, Dr. Alberto Costoya Arrigoni reported the birth of the first Chilean

baby by IVF and ET at the Military Hospital of Santiago de Chile. Both pregnancies were reported by these physicians at the First Congress of the Latin American Federation of Sterility and Fertility Societies, in Lima.

In 1985, Dr. Juan Coyotupa Vega, Dr. Eduardo Maradiegue Méndez and Dr. Guillermo Llerena Cano started performing the Gamete Fallopian Tube Transfer Procedure (GIFT) at the Clínica Delgado⁽¹⁰⁾, a method described by Dr. Ricardo Héctor Asch in 1984.

In August 1990, the first Peruvian baby was born by IVF and ET with the group of Drs. Ladislao Prazak Krofta, Luis Noriega Hoces and Guillermo Llerena Cano, advised by Drs. Nicolas Neuspiller, Juan Carlos Mannara and Roberto Coco of the Fecunditas Institute of Buenos Aires, Argentina⁽¹⁰⁾. In 1992, the PRANOR group implemented the first human semen bank.

Likewise, in 1992 Gianpiero Palermo reported the first results of gestations achieved by injecting spermatozoa with poor motility into the cytoplasm of mature oocytes, the intracytoplasmic sperm injection (ICSI) technique, which was soon used all over the world to fertilize oocytes with spermatozoa with little or no motility.

In 1995, sperm and embryo freezing began in several reproduction clinics. In the same year, Dr. Santiago Munne and his team, in the United States, began preimplantation diagnosis studies.

In 1998, the Institute of Gynecology and Fertility published the first pregnancies obtained with ICSI, and Dr. Alvaro Ascenzo Aparicio created a new TOMI technique, which consists of tubal transfer of microinjected oocyte, with good gestational results⁽¹¹⁾.

CONCLUSION

The purpose of all these efforts is that the specialists in human reproduction master all the techniques involved in the studies and treatments of the infertile couple, in order to be able to transfer a unique and healthy embryo, and later, after a gestation, to achieve the happiness of being parents for a couple who were carriers of infertility.



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