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# The Pediatric Neurosurgery in Northeast Brazil – Recife Has Become a Reference Centre

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### **Opinion**

Brazil is the biggest Latin American country, with approximately 8,500,000Km<sup>2</sup>, almost 195,000,000 inhabitants, close to 23 inhabitants perKm<sup>2</sup>, 36% under 19 years old, with an infant mortality rate of 20.7 per 1000 live births and the life expectancy at birth reaching 73 years. Brazil is a democratic federal republic formed by 26 States and a FD (Brasilia). One of the Brazilian states, located in the northeast, is Pernambuco which capital is Recife. Since the time of the Portuguese colonization, Pernambuco has had a very important cultural and economic role. Pernambuco has an area of around 98,000Km<sup>2</sup>, with a population of almost 9 million, of which 1,5 million live in the city of Recife and close to 5,000,000 in the metropolitan area. Despite the intense process of industrialization in recent years, Pernambuco's economy still depends on the production and exportation of sugar and alcohol. Pernambuco has three public and five private universities, with four schools of medicine, which apart from medical graduation offer specialized courses, residence of different medical specialities, Masters of Science and Ph.D. Four university hospitals allow students contact with medical practice.

## **History of Medicine**

The history of medicine in Brazil and Pernambuco has been written together from the beginning. Unofficial records relate that the first medical care organization in Brazil was created in Olinda, neighbour city of Recife, Santa Casa de Olinda, in 1539. The first hospital in Pernambuco was founded in 1560 and called Santa Casa de Misericórdia de Olinda. The first Brazilian scientific medical research were performed in Pernambuco during the Dutch occupation, resulting in the first book about Brazilian medicine, De Medicina Brasiliense, by Guilherme Piso and published in Amsterdam in 1648. In the same time a book named Historia Naturalis Brasiliae, was published and written by George Maecgrave. José Correia Picanço, born in Pernambuco, a royal doctor during the reign of Dom João VI, king of Portugal, was the founder of medical education in Brazil, that influenced the creation of the first two

medical schools in Bahia and Rio de Janeiro, in 1808. In 1817, the Military Hospital was created in Recife, where the Practical Surgery School was established. The doctor who is considered the father of Brazilian neurology and strongly influenced the creation of Brazilian neurosurgery as an independent medical speciality was born in Recife, Antonio Austregésilo Rodrigues Lira. In 1928 he invited the general surgeon Alfredo Alberto Pereira Monteiro and the young doctor Jose Ribe Portugal to develop this new medical speciality. In 1938, Prof. Ulysses Pernambucano de Melo Sobrinho, the main teacher of neurology department of Recife Medical School, founded the Revista de Neurobiologia, the oldest medical magazine in South America, which still been published nowadays.

#### **Historical Aspects of Neurosurgery**

In 1947, the Hospital Pedro II's Neurological Clinic (Enfermaria São Miguel) was founded, and with that began the history of neurosurgery in Recife in the hands of its founder Professor Manoel Caetano Escobar de Barros. He organized the first neurosurgery team, with other precursors, as Mussa Hissa Hazin, Célio F Spinelli and Aluizio Freire, influencing a lot of young doctors to do the specialization in neurosurgery. One of then, Professor Hildo Rocha Cirne de Azevedo Filho, reached the position of General Secretary of World Neurosurgical Federation. The history of paediatric neurosurgery in our continent is not very old. The known worldwide argentine Dr. Raul Carrea, is recognized as the father of the paediatric neurosurgery in the Latin American. In Brazil, in the early 70s, some neurosurgeons developed interesting in paediatric patients; among other names as Dr. Gilberto Machado de Almeida, Dr. Leo Fernando da Silva Dietzel, Dr. Jorge Facure, Dr. Jose Pindaro Pereira and Dr. Nelson Martelliin. In the early 90s, many surgeons who made their paediatric neurosurgery specialization in different parts of the world got together to develop the Paediatric Department of Brazilian Society of Neurosurgery, that later became the Brazilian Society of Paediatric Neurosurgery. This group was formed by José Francisco Salomão, Hamilton Matushita, Benicio Oton de Lima, Helio Machado and Sergio Cavalheiro, and quickly grow. Reaching nowadays more than 200 surgeons dedicate to paediatric cases.

#### **Pediatric Neurosurgery in Recife**

In 1980, Dr. Helio Van Der Linden, ex-resident of Pitié-Salétrière Hospital in Paris, established the first Paediatric Neurosurgery Service in the Instituto Materno Infantil de Pernambuco, and worked there until his tragic death in 1987. In 1986, it's created the Paediatric Neurosurgery Ward in the Hospital da Restauração, under responsibility of Dr. Ana Lucia Avila. In 1991, returning from Radcliffe Clinic Oxford and Middlesbrough General Hospital, England, Dr. Geraldo José Dantas Furtado assumes the paediatric neurosurgery department in the IMIP. In 1992, Dr. Artur Da Cunha returned from Germany and joined Dr. Furtado in the IMIP. He was five years in Germany while one year by Professor Nielsen Sörense in the Paediatric Neurosurgery Department of Neurosurgery Clinic of University of Würzburg. With help from a Germany foundation, Globana Stiftung, he brought a lot of modern neurosurgery instruments like a modern Leica Neurosurgery Microscopy, Bipolar and Cranitomy devices. In 2000, Dr. Da Cunha was add to the paediatric neurosurgery team of Hospital da Restauração (HR) and created another paediatric neurosurgery Department in the Hospital Barão de Lucena (HBL), this with main interest in neonatology neurosurgical patients. The department of Pediatric Neurosurgery of the HBL lasted only 8 years, being closed by changes in the administrative policy of the Secretary of Health of Government of the State of Pernambuco.

Nowadays, Recife has 2 hospitals with paediatric neurosurgery department: IMIP and Hospital da Restauração. The first one is a private institution and the others are public hospitals. We have only 5 neurosurgeons dedicated to paediatric patients, with about 1000 procedure per year. The patients come from metropolitan area and neighbour states as well. We have been seen some change in the rate of our pathological cases. Since 1994, with the routine introduction of neuroendoscopy technic, less shunt implant was done and avoiding the shunt complication. Another very important change was in the spinal malformation rates. We have observed a decline in the number of cases, from 70 operated cases per year in 1992-1993 to almost 30 cases per year in 2009. The economic and social improvement in the last years, along with a better nutrition, could be the reason for this change. The more important Paediatric Neurosurgery Service in Recife is part of the Departament of

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Neurological Surgery located at the Hospital da Restauração. The HR lodges about 180 neurosurgical patients which over 30 are paediatric. It has the biggest Emergency in the city with the main paediatric trauma centre. About 40 cases with CNS paediatric trauma has been caring per day.

The Department of Neurological Surgery is direct by Professor Doctor Hildo Rocha Cirne de Azevedo Filho, and three surgeons form the paediatric team, Dr. Artur Da Cunha, Dr. Suzana Serra and Dr. Igor Faquini. We house the more important residents training program in the northern part of the country, that receive three residents per year for a program of five years, with a rotation program in the paediatrics neurosurgery. The HR has been selected by the WFNS Foundation as International Training Centre and entitled to receive a resident per year to be incorporated to our fiveyear program. Recife is not only a neurosurgical care and education centre. Our daily experience has been filling papers, books, courses and congress participation. We have a very important role in the Brazilian Society of Paediatric Neurosurgery foundation, and in March 2003 Recife hosted the V Congress of the SBNPed. Two of us were President of our paediatric neurosurgery society, Dr. Geraldo Jose Dantas Furtado and Dr. Artur Da Cunha. In the international area, we gave an enormous contribution to founding and developing of the Paediatric Chapter of Latin American Federation of Neurosurgical Societies. Dr. Artur Da Cunha was General Secretary in 2000 - 2002 and President of this Chapter in 2002-2004. He also, in November 2009 organized in Recife, the Third Latin American Congress of Pediatric Neurosurgery. Thus, Recife has been firming as one of the main centers of pediatric neurosurgery in the Brazilian and international scenario.

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