Pierre Budin (1846-1907) [1]

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Pierre Constant Budin worked in France to improve the lives of newborns and their mothers during the late nineteenth century. Budin stressed the importance of proper nutrition in infants and educated new mothers on breastfeeding and infant care. Budin established infant care facilities and created a nutritional check-up system for infants. Budin helped design early artificial nipples, breast pumps, and incubators for premature newborns. He also began the practice of consulting with new mothers after they gave birth, redefining the roles of obstetricians.

Budin was born to farmers on 9 November 1846 in Énencourt-le-Sec near Beauvais, France. Budin attended the Collège de Beauvais, a middle school in Beauvais, France, which at the time was a catholic convent renovated into a boarding school for boys. From 1865 to 1867, Budin studied at Lycée Napoléon, a high school where he received a baccalaureate degree in philosophy. In 1867, Budin began medical school in Paris, France, at the institution that later became part of the Paris 6 University. In 1872, while a part-time resident at the Hôpital de la Charité in Paris, Budin married Marie-Thérèse Sasles.

In 1874, Budin began a fellowship in Edinburgh, Scotland, where he studied with Joseph Lister. Lister was a surgeon who promoted antisepsis, the practice of sterilizing surgical instruments and cleaning wounds to reduce post-operative infection. As a fourth-year resident, Budin visited obstetricians in Britain and Germany before returning to Paris in 1875. There he began working under the supervision of Stéphane Tarnier at the hospital Maternité Port-Royal in Paris. Tarnier was responsible for implementing the use of infant incubators in that hospital and Budin requested special services in the form of more comfortable beds for pregnant women, striving to improve maternity ward standards.

During his fourth year of medical residency, Budin published "La ligature du cordon Ombilical" (The Ligation of the Umbilical Cord) in which he discussed the experiments Tarnier had performed at the hospital Maternité. Tarnier had measured and collected blood from the placenta [2] to evaluate how much blood was lost while cutting the umbilical cord [3]. Tarnier recorded a difference between the amount of blood retained in the placenta [2] depending on whether he cut the umbilical cord [3] immediately after delivery or several minutes after. Tarnier advised Budin to delay cutting the umbilical cord [3] to allow time for blood from the placenta [2] to flow into the infant. In 1876, Budin presented his own research on the umbilical cord [3] in his doctoral thesis, "De la tête du foetus au point de vue de l' obstérique" (The head of the fetus [4] from the standpoint of Obstetrics) and earned his medical degree. Two years later, Budin became an associate professor within the school of medicine in Paris.

In 1885, at the age of thirty-eight, Budin suffered from serious health problems which required surgery. In 1889, the French Academy of Medicine elected Budin as a member. During the early 1890s, infantile diarrhea, caused by bottle-feeding cow [5]'s milk to infants, contributed to infant mortality, often because the milk had not be properly pasturized. Budin insisted that
breast milk from women was superior to milk substitutes for infants unless they couldn't breastfeed. In 1892, Budin founded a system of clinics at the Hôpital de la Charité that supervised the care of infants after discharge from maternity hospitals. Budin established consultations in which he met with new mothers and encouraged them to breastfeed and to monitor their infants' weights. To encourage regular attendance for consultations, Budin provided mothers with economic incentives and gifts.

Budin designed several items for new mothers and their infants. Budin designed a rubber nipple and developed a smaller version for infants with low birth weight who were unable to suckle. For women with premature infants, Budin created an apparatus that pumped milk from the breast, making breast milk more accessible for infants who were unable to suckle. Budin, together with obstetrician Joseph Chavanne, gave two presentations on the results of maternal education and the sterilization \[8\] of milk at the French Academy of Medicine in 1893.

In 1895, Budin returned to the Hospital Maternité and became chairman of obstetrics, a chair that Tarnier had previously held. He developed the first specialized infant-care center including a pavilion for premature infants and infants who were small for gestational age. In 1897, Tarnier died and Budin took over his work. The following year, Budin became professor of obstetrics at the medical school and director of the Tarnier Clinique, which was later grouped into the Hôpital Cochin in Paris. He also became a member of the French Academy of Medicine in Paris.

In 1898, in addition to working as an obstetrician, Budin founded the Obstetrical French Society in Paris. Budin also became an honorary member of the London Obstetrical Society in London, England, the Edinburgh Obstetrical Society in Edinburgh, Scotland, and the Boston Obstetrical Society in Boston, Massachusetts. Additionally, Budin founded the Journal L’Obstétrique (Journal of Obstetrics) and became the corresponding editor of the American Journal of Obstetrics and Gynecology in France.

In 1900, Budin published his most popular work titled *Le Nourrisson* (The Nursling), a compilation of ten lectures addressed to his students on the methods he found successful in preserving the lives of infants. Budin co-founded the League Against Infant Mortality in Paris 1902 and introduced an effective approach to perinatal care, which many physicians adopted. By 1905, twenty-eight medical institutions in Paris had implemented his system. Budin spent the last years of his life traveling to give talks at medical conferences. Budin contracted influenza and pneumonia at a conference in Marseille, France, and died on 22 January 1907 at age 66.

**Sources**

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