

Bernays (A. C.)

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Contribution to the  
physiology of parturition xxxxx



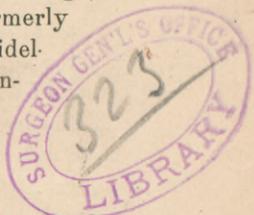


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CONTRIBUTION TO THE  
PHYSIOLOGY OF PARTURITION.  
ILLUSTRATED BY THE HISTORY OF A  
CASE OF LABOR DURING PARALYSIS.

BY

A. C. BERNAYS, A. M., M. D., M. R. C. S., Engl.,  
Member German Society of Surgeons, Berlin; formerly  
with resident Surgeon at the Academie Hospital in Heidel-  
berg; Surgeon to the Surgical and Ophthalmic In-  
firmiry of St. Louis; Member of the Ameri-  
can Association for the Advancement of  
Sciences, etc., etc.



Mrs. G., wife of a pilot, contracted syphilis from her husband in 1879. When first seen, she had an eruption of a papulous exanthema, covering almost her entire skin. The primary lesion had passed unnoticed. She was treated by my father, Dr. Geo. J. Bernays, with proto-iodide of mercury and inunctions, for nearly a year. Early in 1880 she had a very severe iritis, which also readily yielded to mercury. In March, 1881, she was apparently well, and in the meantime, had given birth to a child, and consulted me with regard to an eruption on its breast, very much resembling *herpes zoster*. Believing it to be a manifestation of hereditary syphilis, it was treated as such with the desired effect.

In the fall of 1881, the patient showed severe symptoms of neuralgia of the brachial plexus and also the sciatic nerves; again, antisyphilitic treatment was instituted *in optima forma* but in spite of the efforts of Dr. Bernays, Sr., the patient grew worse, and gradually became totally paralyzed in her lower limbs and all the muscles of the trunk, which are supplied by nerves originating from the cord, below the seventh cervical vertebra. Her arms were not affected by this paralysis. Accurate tests made with pins, and Hughes' æsthesiometer showed that there was complete anæsthesia in the affected parts. When tested by the electric current, the irritability of her muscles was found reduced to a minimum, as were also her tendon-reflexes, when tested by per-

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*adullio-*  
~~triceps~~

cussion of the quadriceps and ~~triceps~~ tendons. At one of my visits in September, I discovered that our patient, in her deplorable condition, was pregnant, and expected her confinement in March, 1882. Although it is known that women have been delivered at full term in cases of paralysis, while in deep syncope,

or where there was total prolapsus of the womb, yes, even in a trance, I found very little practical information in the literature of this subject. I was in a state of great uncertainty in regard to this case, and hardly knew what to expect. I reasoned that the process would probably very much resemble a case of labor, where deep narcosis had been produced by the administration of an anæsthetic. In both cases, there would be an exclusion of the action of the voluntary muscles.

I was hoping, for the woman's sake, that the very usual premature syphilitic degeneration of the decidua, would bring about a miscarriage, before the child had grown to a very considerable size. This did not take place, undoubtedly on account of the perfect rest all the parts were enjoying. On the morning of March 9th, 1882, I was called to see the patient, and had the pleasure of witnessing the most painless obstetrical case, that ever came under my observation. The peculiarity was, that in place of the usual interrupted labor pains, there was but *one continued contraction of the uterus* which resulted in the expulsion of a large, well-formed, healthy child. The delivery was accompanied by a very small loss of blood, as was also the placenta, which followed spontaneously about five minutes after the birth. The whole process lasted about thirty minutes. The womb firmly contracted, there was a regular lochial discharge, no fever, mother ready to be moved from her bed to an invalid chair. Suddenly, on March 24th, Dr. Bernays, Sr., was called to attend, on account of a very severe uterine hæmorrhage. The vagina was tightly plugged at once, but on the next day had to be tamponed again, before the bleeding finally ceased. From this time forward, mother and child remained well and have not needed the attention of a physician only so far as the paralysis is concerned.

In this connection, some remarks about the nature of the disease causing the paralysis may be of interest. It is highly probable that in the upper portion of the spinal marrow, say about the end of the cervical enlargement, there is a syphilitic or gummy degeneration.

This would involve the anterior as well as the posterior columns of the cord, in order to account for the loss of the motor and the sensory faculties below the diseased spot. In other words, we may suppose that all possible connection between the lower portion of the body and the brain was nearly severed by the gummy tumor. So far as is known, the only nerve fibres which reach the womb are derived from the ganglia and plexus of the grand sympathetic. The researches of *Frankenhäuser*, published as a monograph at Jena in 1867, show that the nerves of the womb are derived from the aortic plexus and from the lumbar and sacral ganglia. Any connection with the spinal marrow must pass through these plexuses. *Oer* and *Schlesinger* by their experiments on rabbits and dogs, (published in the *Vienna Annals of Medicine*, 1872) claim to have found that the centre for motions of the womb is in the medulla oblongata. We have strong ground for thinking that, if any such centre exists, it was not in connection with the womb in our case, on account of the disease in the spinal cord which caused paralysis. On the other hand, we have during the past years, based on numerous researches, arrived at a point where an independent action of the sympathetic ganglia is placed in doubt. The natural conclusion, therefore, is that the contraction of the womb is solely produced by the direct irritation occasioned by the *fatty degeneration* of the decidua, which we positively know takes place during the last month of pregnancy. Whenever this degeneration causes a loosening of the connection between the ovum and the walls of the womb, an irritation of the ends of the nerve-fibres in the womb will take place which start contractions. As these contractions gradually increase, they produce greater displacements between the womb and its contents, which, in turn, irritate the neighboring nerve-fibres. To *Simpson* of Edinburgh belongs the credit of first having clearly expressed this theory to explain the inception of labor and the gradual increase of the contractions. This theory would exactly fit our case, and we can account for the setting in of labor at the proper time by *Simpson's* theory, without reference to involvement of either the cerebral, spinal or sympathetic centers. The most singular fact in our case, namely that there was but one uninterrupted, almost painless, contraction, which sufficed to finish the expulsion of a full-sized child, remains to be elucidated. I will offer the following in explanation. In the case before us, there was absent all the usual assis-

tance afforded by the use of the abdominal muscles to aid the contractions of the womb. But there was also absent the *resistance* caused by the tension of the lower diaphragm of the pelvis, which consists principally of the strong levator ani muscle. Besides, I must state that the Vagina and the perineum, having lost their support by the paralysis of the levator muscle, offered no resistance, whatever, but simply hung in their places as flabby, inert masses. After the mouth of the womb became enlarged, we can readily perceive that the child was simply squeezed through the inert pelvic canal by one single contraction.

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No. 201 South 5th, St., St. Louis, Mo.

W6 P3 v. 7481 box 1074 no. 9



