

POST PARTUM HEMORRHAGE.

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It is my endeavor to present to you a brief résumé on the subject of post partum hemorrhage, because I believe that it is a fitting companion subject to a paper on puerperal eclampsia, read at our last meeting and the interesting discussion elicited on one of the most serious complications of parturition. I do not venture to read this paper, because of my belief in my proficiency to handle this complication nor because I have had any extended opportunity to observe or treat this condition, but because of one recent experience and a desire to know what other members of this society can teach me. This complication is one of such infrequent occurrence (as will be seen

by statistics to follow) that I believe the citation of our individual experiences will be helpful to all. Post partum hemorrhage means any hemorrhage that results in the parturient canal after the birth of the fetus. The bleeding may occur from the placental site, cervix, vagina or floor of the pelvis. The form of hemorrhage known as "flooding" occurs only from the placental site, and is the form that is commonly thought of as post partum hemorrhage. The other varieties coming from the lower end of the parturient canal are due to accidental lacerations. Post partum hemorrhage may be regarded as immediate or primary, if occurring during the first twenty-four hours. Secondary or remote, if taking place after the lapse of twenty-four hours. This hemorrhage may be frank, open or external in its manifestation, or not being present to view it is designated internal or concealed. It is also possible for the two varieties to be present in the same case. The frequency of the complication, or, rather, I may say, the infrequency of post partum hemorrhage is shown by the following tables from Edgar:

Mild form	1 in 500
Severe form	1 in 1000
Fatal form	1 in 5000
33 per cent	Praemipara
66 per cent	Multipara
Before placental delivery	25 per cent
After placental delivery	62 per cent
Before and after placental delivery.....	11 per cent

The mechanism of the condition is brought about by a disturbance of one of the three recognized factors operated in checking of bleeding from the uterus.

(A) Changes in the vessel wall. As pregnancy advances the veins and arteries enlarge, their external and middle coats become absorbed so that only the intima remains. The lumen enlarges, blood current is slowed and they exist as large sinuses, at times aspirating air and producing death by air embolism. Hence the necessity of grasping the fundus firmly to express air from its cavity and see that no air is injected in performing intrauterine irrigation.

(B) Changes in the muscle fibers. As the uterus enlarges the unstriated muscle cells take on added growth, new fibers develop; from their former, or quiescent parallel arrangement, they elongate and become arranged end to end, forming large circular bands around the entire uterus and also developing circular bands around the large

(C) Changes in the blood by which its coagulability is impaired. Normally the blood in pregnancy possesses increased power for coagulation. After the expulsion of the foetus the uterus normally continues its intermittent contractions and relaxations, the muscles now being free to fully contract, a second process is set into action, viz., retraction. By this process is meant the rearrangement of the muscle fibers from their end to end arrangement to positions in which they are more or less parallel. This process of retraction is one that when once instituted is progressive until the uterus has attained its completely involuted condition. Retraction is, however, dependent upon contraction and in the absence of the latter is only slightly, if at all, operative.

After the mouths of the sinuses have become plugged and their intemae retracted and a certain amount of retraction has taken place in the muscle fibers, bleeding does not proceed even in the absence of contractions. This condition is seen in the relaxed uterus that does not bleed. In the etiology of this complication the principal constitutional predisposing causes are found in the changes in the blood and capillaries incident to the hemorrhagic diathesis, such as hemophilia and scurvy or the altered state of the blood in mothers suffering from albuminuria, extreme malarial poisoning, in women suffering from menorrhagia due to chronic endometritis, in delicate constitutions due to heredity, or acquired as the results of adverse conditions of living. The complication is more frequent in the leisurely rich than in the hard working classes, and more common in multipara than in praemipara, also diseases in the heart, lungs and liver, by causing chronic passive congestion may lead to hemorrhage.

The local predisposing causes of postpartum hemorrhage are due to precipitate expulsion or manual extractions by which the muscles have not had time to contract and retract *pari passu* with the emptying of the uterus. Protracted labors, multiple pregnancies and hydramnios so overstretch and tire out the musculature that some time may elapse before it regains its function and hemorrhage occurs in the interim. Previous muscular degenerations due to chronic metritis, neoplasms and malpositions, may prevent the normal contractions of the uterus and predispose to hemorrhage.

Among the exciting causes of postpartum hemorrhage are to be mentioned the improper treatment of the second and third stages of labor. Edgar states "that almost without exception this complication is due to the attendant's fault," and applies to the too rapid extractions of the fetus or injudicious efforts at bearing down by

the patient in the second stage. The excessive use of ether and chloroform are also considered as pertinent causes. Sometimes levity, coughing and defecation by causing increased intra-abdominal and intravascular pressure, may remove the plugs in the mouths of the sinuses and cause bleeding. Retained placenta, pieces of placenta, as in the breaking off of succenturiata, by interfering with proper contraction will cause bleeding.

Uterine apathy, imperfect nerve supply and mechanical obstruction due to fibroids act in a similar manner. In placenta previa the attachment of the placenta is so low that the imperfect and slower contraction of the lower uterine segment may allow of considerable bleeding. The symptoms of this distressing complication is manifested in the open variety by a flood of blood from the vaginal opening. In the concealed variety the uterus is found to be soft or entirely absent, the fundus, if it can be determined, is found at the level of the umbilicus or higher, the woman complains of feeling faint or dizzy, she begins to yawn (air hunger), lips and countenance turn pale, she complains of objects looking dark and may say she feels the flooding. If her pulse were examined it would be found rapid, very weak or possibly absent. These symptoms coming on before the expulsion of the placenta and before our hand has left the fundus give us a chance for quick and effective action. If they appear after we have gone and considered all as well we may be called back to a dead patient. Not all patients die even when left alone to bleed. Occasionally bleeding stops because blood pressure is so reduced that syncope supervenes, and the life processes now reduced to such a low ebb, the spark of life still remaining can be rekindled by proper and prompt remedial measures.

The diagnosis is generally plain when hemorrhage is external, but when internal we get symptoms of syncope and collapse and may need differentiation from a few simulating conditions, that need brief mention. Syncope after delivery is generally due to the afflux of blood into the abdominal vessels, now suddenly relieved from their former surrounding pressure just as in the syncope following the two rapid evacuation of a large quantity of ascitic fluid in the late stages of atrophic scirrhus. Enlargement of the abdomen due to gaseous accumulation is readily differentiated by simple percussion and a hysterical attack can readily be determined by the absence of bleeding and by quality of the pulse. Bleeding from lacerations in the cervix (circular artery), vagina or perineum, usually come on within the first fifteen minutes after completion of the second stage and can readily be checked by exposure and suture.

The prognosis is much better in the open than in the concealed variety because of the earlier detection of the complication and because remedial measures are more promptly instituted. The condition is very dangerous when the blood is thin and refuses to clot. A great deal depends upon the skill of the attendant and the facilities and assistance he has at hand.

The late results from hemorrhage are the same as those from any other cause. The preventive treatment consists in the removal of all existing abnormalities or perversions of function that may act as predisposing causes of postpartum hemorrhage. The proper management of the second and third stages of labor would obviate the too rapid extraction of the child by mechanical means, and the too precipitate labor by natural means. The judicious use of a little chloroform as the face is about to roll over the perineum would reduce the amount of voluntary effort on the part of the patient and would bring about firmer contractions in the uterus. In praemipara the forehead generally makes numerous excursions over the perineum before the head is expelled, while in multipara one uterine contraction and strong voluntary effort forces out the head, and if the shoulders are not too large, also the entire body. Per contra, we should not let our patients linger too long without assistance so as to avoid the more dangerous condition of exhaustion. After the birth of the fetus the hand should be placed on the fundus and gentle circular movement should be exercised on the fundus of the uterus between the diastased recti. During the advent of a firm contraction pressure downward and slightly forward in the axis of the superior straight should be tried. If too far forward over the pubis or too far backward over the promontory this improper expression by Crede's method may act to retain the placenta and thus allow hemorrhage to ensue.

I believe that we all employ ergot in drachm doses after completion of the third stage of labor as a matter of safety. The placenta and membranes are now examined carefully to see if there are any missing pieces, if there are we can usually look for some bleeding that will require curettage to check. If all has gone well so far, the child can be placed at the breast so as to encourage permanent contractions of the uterus because of the close sympathy that exists between these two organs. If we have diagnosed postpartum hemorrhage there are three indications to be met and as soon as possible. (a) Empty the uterus; (b) secure firm contractions; (c) restore loss of blood. For the emptying of the uterus use Crede's expression for the removal of placenta and clots; if placenta refuses

to come it must be removed manually in the face of this condition. Crede's method can well be combined with aortic compression by using the ulnar border of the expressing hand. If effectively applied bleeding can in this way be temporarily checked. To secure proper contraction Crede's compression combined with fundal irritation may bring about contractions and cessation of the flow. If this method fails, Brieske's bimanual method is to be tried. This consists in grasping the fundus with the outer hand and the posterior lip of the cervix with the other hand, drawing both forward and compressing the uterus against the symphysis pubis as a point of counter pressure. If this method fail it will be well to try Gooch's method, consisting of fundal pressure against the closed fist in the uterine cavity. Any foreign substance in the uterus acts as a powerful provocative of contractions.

If the hemorrhage be slight a single hot intra-uterine douche consisting of one per cent of acetic acid in hot water will check bleeding. In aggravated conditions a piece of sterile gauze soaked in pure vinegar will generally succeed. Exposing the cervix and packing the uterus with a long strip of gauze may also be tried in slightly persisting hemorrhages, but I believe in severe cases this can only be carried out after the damage is done. The acute anemia following a severe hemorrhage or a protracted small bleeding calls for the restoration of the volume of blood, supplying the remaining fluid to vital organs and in using stimulants if necessary for a flagging heart and to overcome shock. The volume of blood can be increased by the use of a normal saline solution (one drachm to the pint of water), injected per rectum, by hypodermoclysis, or by transfusion into a superficial vein. In supplying the little remaining blood for the use of the brain and heart it is necessary to lower the head by removing pillows and raising the foot of the bed. If necessary auto-transfusion can be tried by applying bandages from the extremities toward the trunk or by raising each member vertically and applying a firm bandage at its base. If necessary to stimulate the heart inject such diffusible stimulants as ether or camphorated oil. Then apply external warmth and enjoin complete rest.

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