Rishmiller (J.H.)

[Reprinted from the AMERICAN GYNÆCOLOGICAL AND OBSTETRICAL JOURNAL for October, 1896.]

THE EMPLOYMENT OF GAUZE IN THE UTERINE CAVITY.

BY JOHN H. RISHMILLER, M. D., MINNEAPOLIS, MINN.,
Ex-House Surgeon to the Woman's Hospital in the State of New York.

The employment of gauze in the genital canal in women has attracted my attention for the past three years, and during this period I have missed no opportunity of investigating this subject. I wish to consider gauze as utilized, first, as a uterine drain, and, second, as a uterine tamponade; its judicious and injudicious employment, and the effects we may expect directly or indirectly from its use.

For drainage to be effectual it must afford a ready exit for the secreted material, and so prevent reabsorption. Many operators invariably tamponade the uterine cavity with gauze, and some perform the identical process with the cervical canal, while others simply insert a narrow strip reaching into the uterine cavity and protruding from the external os by several inches. But how many are contented without gauze insertion? None if it were always accessible. Our German *confrères* in a measure have discarded gauze introduction into the uterine cavity subsequent to curettement, and it seems to me the ideal and most rational process. I am firmly convinced of the fallacy of packing the uterine cavity in aseptic cases that have no functional disturbances. Furthermore, I invariably have noticed a gradual rise of temperature after thirty-six or forty-eight hours, no matter how scrupulously antiseptically my work was executed or how aseptic the cases I was dealing with. Experience has demonstrated that *the average temperature after curettage is lower without than with gauze packing.* Why, therefore, are we employing gauze tamponade so promiscuously without more forethought?

It is not my purpose to decry the invaluable therapeutic agent gauze, but, on the contrary, to maintain that it is indispensable in all forms of surgery, provided we employ it discriminately and not mechanically, or in a routine fashion. Permit me to ask a question:

COPYRIGHT, 1896, BY J. D. EMMET, M. D.

SURGEON GEN'L'S OFFICE, 576, LIBRARY.

Why do we tamponade the uterine cavity and canal and speak of it as uterine drainage? In tamponing, the uterus is stimulated to contraction, tending to expel the gauze through the cervical canal, and by so doing it presses the gauze over the internal os, forming a plug, which dams back the secretions. The wedge of gauze, if I may term it such, is always covered with a thick tenacious mucus tinged with blood, and resembles uterine catarrh secretion. This gummy mucus is the result of uterine irritation and inflammation, kindled by the presence of a foreign body. On examining the gauze after its extraction, we readily distinguish between the part which has been in contact with the uterine walls and that which has been in the interior of the tamponade. As the meshes are thus occluded, it is evident that no drainage can percolate through the gauze, and whatever secretion exudes from the cervical canal escapes between the walls of the uterus and the ball of gauze. Now imagine a uterus tamponed for thirty-six hours or longer, the upper space of the corpus uteri occupied by mucous or septic matter, as the case may be; on uterine contraction, this fluid seeks the place of least resistance, and what is the result? It is forced into the Fallopian tubes, lymphatic sinuses, blood vessels, etc. If we are treating a pure aseptic case no bad results can follow; but suppose we have a septic one, or our antiseptic technique has been imperfect, then we can aptly comprehend how a rise of temperature is produced. Many patients have developed after curettage salpingitis and pyosalpinx, which has been erroneously attributed to the improper use of the curette. This is an absurdity; it was produced by indiscreet tamponade of the uterus, thus hindering the egress of secretions through the natural passage, but favoring it through the unnatural one—viz., the ostium uterinum. In puerperal cases it is even more imperative to bear this in mind, because we are encountering enlarged Fallopian tubes, sinuses, etc. The less we tamponade in septic puerperal cases the more tubes will be saved from the necessity of ablation. *More cases of pyosalpinx are produced from the injudicious use of uterine-gauze tamponade than from the use of the curette.*

It has been maintained that the uterine canal is held patulous by the gauze, and permits egress of the secretions. This is fallacious; on the contrary, the os is plugged with the gauze. This fact I have demonstrated over and over again, and the same must be true with your observations. For instance, on inserting a speculum and then withdrawing the gauze, we always observe a gush

of mucus—septic or non-septic—coming from the cervical canal. Serum will always drain from the uterine cavity, with drainage or without drainage; but the cases that validate or invalidate uterine-gauze tamponade are the septic, both the puerperal and non-puerperal. In the former we frequently observe fragments of decidual membrane, sloughing tissue, fœtal *débris*, etc., expelled subsequent to the gauze extraction. Another circumstance to verify that the uterine cavity and canal is a better drain without than with gauze is confirmed clinically: on extracting the gauze after curettage, where a rise of temperature has been observed, the fever will, as a rule, immediately abate. We have no better drain than the cilia, and by packing we impede the ciliary current.

In puerperal sepsis with effete retained material, emptying the uterus thoroughly and following with a tepid antiseptic irrigation, loose insertion of gauze into the uterus, which is to be extracted in six to eight hours, favors the removal of effete gummy matter by adhering to the gauze. The longer we allow the gauze to remain the more it loses its usefulness as drainage by the interstices being occupied and blocked by a fibrinous deposit and cast-off cells, the gauze acting like a filter. Too strong germicidal solutions for irrigation act as a caustic, and produce suppuration, which serves as a culture medium for the unremoved germs, some of which remain, no matter how thoroughly we accomplish our work. If we accept the hypothesis that " the endometrium is not a mucous membrane, but is a lymphoid structure lining an embryonic organ," then we are considering structures which possess vital absorptive properties far more active than any mucous lining in the body. These lymphoid structures of the uterus are directly continuous with the innumerable lymph channels between the layers of the broad ligaments, and thus septic virus easily enters the portals of the general system. I wish to emphasize the using of *tepid* instead of hot uterine irrigation in all septic cases, for the reason that the capillaries and sinuses in the uterus are loaded with septic matter, and hot irrigation will cause these to contract, thus forcing the poison into the system, and hence the invariable chill following such a procedure. On the other hand, a tepid irrigation will dilate the mouths of the capillaries, sinuses, etc., thereby promoting the emptying of the virus into the uterine cavity. This is accompanied by a slight bloody coloration of the irrigating fluid and a decrease of all septic symptoms.

Another too frequent employment of gauze is in the repair of lacerated cervices. The originator of trachelorrhaphy, Dr. Thomas Addis Emmet, does not insert gauze into the uterine canal after the performance of this very important operation. In fact, he condemns it *in toto*. We encounter lacerations which have been productive of the fungosities and catarrhal inflammation of the uterine mucous membrane. Here dilatation and curettage prior to trachelorrhaphy is absolutely essential for a cure.* It is claimed that a strip of gauze in the cervical canal will keep the denuded surfaces separated if overlapping, and prevents coaptation and union. We need not fear occlusion, provided we have left a central line of undenuded mucous membrane. It is unquestionably difficult to retain the gauze exactly on this central line; furthermore, the extraction will more or less disturb the parts in apposition.

I disapprove of gauze introduction into the uterus after curettement for gonorrhœal endometritis, on the principle enunciated that it is a prolific cause of pyosalpinx. An antiseptic vaginal dressing is highly commendable for the purpose of keeping the rugosities separated and serving as a surgical dressing.

I have directed your attention to the evil of using gauze without forethought; but now let me merely mention the maladies where firm uterine tamponade is destined to produce marvelous results. In sterility, depending upon flexion of the uterus, where the lumen of the cervical canal is narrowed and bent on itself or tortuous, accompanied by dysmenorrhœa and other functional disturbances, thorough tamponade after dilatation of the cervical canal and curettage of the corpus uteri will uniformly be followed by unusual amelioration of all symptoms, and in some cases absolute cures. The cervical canal should, in all instances where we are seeking to keep the canal patulous, be tamponed as thoroughly as the uterus. If this is neglected in even the minutest detail, we are not accomplishing our desired object. The gauze should be left *in situ* for a week, or as long as the temperature will permit. Tamponade is invaluable in uterine hæmorrhage, when the muscular walls are flabby and inert, serving as a stimulus and causing the uterus to contract for the expulsion of the foreign body. Intra-uterine fibromata may be encouraged to enter the cervical canal by frequent

* Dr. Emmet never curettes the uterus at the time of operating for laceration of the cervix.—EDITOR.

repeated uterine tamponing, and ultimately require excision. In some cases with sluggish circulation of the pelvic viscera a thorough tamponade will tone up the vessels and induces their emptying. The absorption of parametritic exudation is favored by thorough tamponade; likewise phlegmatic nodulations in the broad ligaments, and boggy congestions immediately involving the surrounding structures of the uterus, are much relieved by uterine packing.

Operators are at variance as to what gauze is the best and how it should be prepared. They are as inharmonious with their theories as the gauze differs in its texture. The cross threads of gauze impede drainage, and, if manufacturers could supply us with gauze similar to lamp-wicking, we would have advanced one step toward possessing an ideal drainage. Theoretically, we should employ the finest gauze on the market, since the activity of capillary movements varies inversely with the diameter of the capillary tube. For my purpose I use the dry-sublimated (1 to 2,000) gauze or a ten-per-cent. iodoform gauze. This is to be cut into narrow strips one half to one inch in width, varying with the conditions to be treated. The most important requirement is the absolute sterilization, which should be done with dry heat immediately preceding the operation. Under no assurances would I rely on the gauze which has been sterilized by manufacturers. Do your own sterilizing, and then you know what you have.

From the facts presented I wish to deduct the following conclusions:

1. The uterus should not be tamponed in aseptic cases unaccompanied by functional disturbances.

2. Firm uterine-gauze tamponade does not promote drainage, but, on the contrary, favors retention.

3. In trachelorrhaphy and amputation of the cervix, uterine gauze insertion is a hindrance to coaptation, and on extraction a disturbance to primary union.

4. In septic cases, both puerperal and non-puerperal, very loose gauze insertion into the uterus, which is to be removed within six to eight hours, is highly commendable.

5. In functional disturbances of the uterus depending upon flexion, mural neoplasms, and impeded circulation, thorough tamponade is invaluable.

Dayton Building.