

surrounded it; but frequently clumps of pigment were found arranged about the nuclei, having either partially or wholly replaced the protoplasm of the cell. In some cases both the protoplasm and the nucleus appeared to be filled with pigment.

Around the deposit there was an inflammatory infiltration rather definitely confined to the area of pigment deposit. The infiltration was mainly perivascular, but it was found throughout the deposit. The cells were chiefly small round cells with some epithelioid cells.

To determine positively that the pigment was iron, sections were tested with ammonium sulphid and potassium ferrocyanid. Ammonium sulphid turned the pigment black, the remainder of the section remaining unstained. Sections were treated with dilute acetic acid solution, and then with potassium ferrocyanid solution. This turned the color of the pigment deposit to the characteristic Prussian blue. As a control, in order to determine that the amount of iron in melanin is not sufficient to produce these reactions of iron, sections of a deeply pigmented mole and of pigmented sarcoma were tested in the same way for iron. Neither test produced any discoloration of the melanin.

The explanation of the accident undoubtedly is that the ferrous sulphate in the vinegar solution came in contact with points where the skin was destroyed down into the corium. The alkaline lymph at these ulcerating points caused a precipitate of organic iron compounds which were ultimately oxidized into ferric hydroxid. This ferric hydroxid, or oxid, an insoluble substance in the blood plasma, remained as permanent stains in the skin.

It is very rare for accidents of this sort to happen, although insoluble substances are constantly applied in eczema and dermatitis. The reason for the rarity of the accident lies in the fact that unless a dermatitis is very severe, the deep layers of the epithelium are not thrown off. If an insoluble powder becomes entangled in the epithelium, it is gradually exfoliated. A stain will occur only when the epithelium at points is completely destroyed and there is ulceration in the corium, so that particles of pigment can be deposited in the corium itself. If this accident happens, healing takes place by the formation of connective tissue around the deposited pigment; there is then no chance for exfoliation to take place, and permanent stains are left, exactly as in gunpowder stains or tattooing. This case and one or two others that I have seen suggest the danger of using insoluble applications in cases in which there is a complete destruction of the epidermis or ulceration, no matter how minute the ulcers are.

I am told that particles of iron in the eye usually in time completely disappear. These particles are too large to be removed by phagocytes, and if they disappear it must be by their gradual solution. This suggests the possibility of the ultimate disappearance of iron stains in the skin, but the course of this case thus far indicates that this disappearance, if it takes place, will be only after a very long time.

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Common Colds.—The phrase "common colds" like "charity," covers a multitude of sanitary sins, and curiously enough, the name has been applied to a group of affections which far from depending absolutely on cold are frequently the direct result of living in close, overheated surroundings having a lower relative humidity than the driest desert known to man. —*Health News*, U. S. P. H. Service.

THE USE OF KEPHALIN TO HASTEN COAGULATION AND HEMOSTASIS AFTER SURGICAL OPERATIONS*

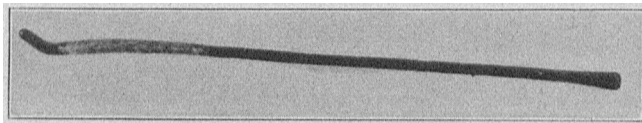
H. L. CECIL, M.D.

BALTIMORE

The need of hemostatic gauze to be used where packing is now necessary in deep seated operations, such as perineal prostatectomies, in which bleeding occurs within the prostatic capsule from which large hypertrophied lobes have been enucleated, has long been recognized at this clinic. This hidden intracapsular bleeding is often considerable, and many strips of iodoform gauze tightly packed within the prostatic capsule have often been necessary, and are even then not entirely successful. Accordingly I have experimented with a gauze impregnated with kephalin, which was shown by Prof. William H. Howell to be the best clot forming substance. Following his methods I have made kephalin from the brains of hogs.¹

The gauze is prepared as follows: The kephalin is dissolved in an excess of ether, about a 5 per cent. solution being made, and this concentrated kephalin solution is poured over gauze strips 6 feet long and 6 inches wide. The packs are then folded, rolled, wrapped in two muslin covers and sterilized in the steam autoclave at a temperature of 120 C. for ten minutes. The heat necessary to sterilize them effectively does not interfere with the coagulation action of the kephalin.

As soon as we began using kephalin gauze packs, it became evident that hemorrhage ceased much more quickly than when iodoform gauze was used, and that it



Kephalin-coated catheter used in "punch" cases.

was unnecessary to introduce so much gauze as previously or to pack it as tightly within the capsular cavities. This was at once a great advantage. Another effect was that the postoperative bleeding which came through the bladder drainage tube diminished rapidly. The gauze has now been used in thirty-four perineal prostatectomies. In many of these cases the urinary drainage has been clear from four to six hours after operation, and in nearly all other cases it is clear on the following morning. In only four cases has the drainage remained bloody for forty-eight hours, and I believe that in these cases the packs did not reach the bleeding point, as the bleeding may have been from a torn piece of mucous membrane at the bladder orifice. When these packs were removed there was only one case in which more than slight bleeding occurred, there being about 150 to 200 c.c. of blood lost. In the majority of cases there was scarcely enough blood to stain the dressings, while many of the patients did not bleed a drop, if one can judge by external appearances. It is important to mention in this connection that fewer packs were used than had been used previously, and thus tension within the wound by very tight packing in order to stop the bleeding was avoided. This would undoubtedly be of even greater importance in other branches of surgery than in urology.

After our success in prostatectomy it occurred to me that the bleeding which occurs after Young's "punch"

*From the James Buchanan Brady Urological Institute, Department of Urology, Johns Hopkins University and Hospital.
1. We are now using kephalin made by Armour & Co., at my suggestion.

operation—or median bar excision—might be stopped by a kephalin coating to the catheter drain which lies within the wound at the prostatic orifice. The kephalin-coated catheters were prepared as follows: A very concentrated solution of kephalin in ether was made and smeared on the terminal 3 inches of a large gum coudé catheter, the tip and eye of the catheter being left uncoated. This coating was best secured by allowing the solution of kephalin to drop on the catheter, which is being revolved at the same time. This coat is about 1 to 2 mm. thick, and surrounds the catheter, as shown in the illustration. The catheter is then sterilized in a glass tube by steam in an autoclave at a temperature of 120 C. for ten minutes. In this way a large amount of kephalin is brought into direct contact with the cut surface at the vesical orifice.

The kephalin has been used in four "punch" cases, the catheters being prepared as described above. Whereas previously these patients had frequently to have clots evacuated from the bladder, it was necessary in only one of the cases in which it was used, and in this case the clot was very small, being only large enough to plug the eye of the catheter. Though it has been tried in only a small group of cases, the results seem to be a striking improvement over the plain or iodoform gauze which has been previously used in all of the perineal prostatectomies, and if one is allowed to judge from four "punch" cases, the result in these cases was still more striking, as there was practically no bleeding at all.

With such results as these to report it seems well to say a word of caution in regard to the method of using kephalin. I believe, from the few times I have seen it tried, that if the gauze soaked with kephalin is used to sponge wounds, no good result is produced, since the sponge takes away with it the clot before the vessel is plugged. In a like manner the smearing of kephalin on a wound to prevent bleeding is equally open to criticism. It appears to me that both of these methods are theoretically and practically open to objection. The widespread recommendation of such an application may serve to condemn a method which if properly used would be of very great benefit to surgery.

Dr. A. D. Hirschfelder, also following the work of Howell, has used in an experimental way the same substance, but in a more impure form. He found that it was of great benefit in bleeding from bone.

CONCLUSIONS

The following conclusions may be drawn:

1. Kephalin causes a quicker and firmer clot.
2. Not as much pressure in packing is required to control hemorrhage as when plain or iodoform gauze is used.
3. When the packs are removed, the clot is of sufficient firmness to prevent bleeding. This is not true of other packs.

Comment by Dr. Hugh H. Young.—Active hemorrhage and slow oozing, which together amount to considerable loss of blood in a few cases, have been a well recognized complication after all forms of prostatectomy. In perineal prostatectomy the gauze packs can be so placed under visual guidance that this complication rarely causes any harm. As a result, the mortality is much less than suprapubic prostatectomy. In some cases, however, many strips of gauze tightly packed in the capsular cavities were necessary to stop the bleeding. This mass of gauze was objectionable—particularly when time came for its removal.

This new kephalin gauze is unquestionably of great value; the capsular bleeding ceases as a rule very quickly after the insertion of a small amount of gauze, and much less packing is required. The large single retention catheter with a kephalin coating acts like magic in the median bar "punch" cases, and removes the one objection to this simple, safe and satisfactory operation.

THE FREEDOM OF THE MEDICAL PRESS*

EDWARD C. REGISTER, M.D.

CHARLOTTE, N. C.

I have chosen a most serious theme, quite well realizing that, far more than we dream, we are making history in our deliberations. The subject may sound somewhat strange. To many of us, the freedom of the press is an accomplished fact, and we listen to the term as one listens to the battle-cry of some ancient age. It is, therefore, not an easy subject to discuss, for two reasons. First, as I have said, we are very prone to take for granted that the freedom of the press is one of the fundamental liberties that were wrought out and won by the heroic endeavors of our fathers, and that it is a fixed and immutable heritage of us, their sons, and as changeless as the process of the stars. The second reason for the difficulty of my theme is that unconsciously we think of the freedom which is ours, either political, industrial or religious, as a right that can be destroyed only by governmental tyranny, and we console ourselves that the freedom of the press has no enemy. But I remind you of the words of a great patriot, that "eternal vigilance is the price of liberty." And the freedom of the press is an essential part of that larger liberty of mankind which has been the object of the evolution of government and of the people. So important did our fathers consider the freedom of the press that many of our states saw fit to write it into their constitutions, and you are quite well aware that it forms a part of the constitutional history of the older nations. We must realize how essential to all liberty is the liberty of the freedom of expression of ideas. I know of no greater proof of the worth of the freedom of the press than the fact that military despotism even today must limit that freedom among the warring nations, in order to make military government possible.

But, you will inquire, in what way is the freedom of the medical press endangered? Am I not uttering a false alarm? Am I not calling to arms men when no enemy threatens? Let us consider this matter deeply and calmly. In the beginning of the consideration, let me say in all justice to those who differ with us that I do not say that any man, or company of men, is trying to defeat that freedom of the press which we so highly esteem. The men and the movements of which I speak would be, perhaps, the first to disclaim any desire or purpose to put on the medical press a censorship which would practically destroy this freedom. I say this in justice to them. Still, unconsciously those things can be brought to pass which we come too late to see are destructive of the best in our scientific life. Let me give an illustration: The wind and rain of ages covers the ancient Roman forum with a fine coating of debris and dust. To no one generation was this

* President's address, read before the American Medical Editor's Association, New York, Oct. 25, 1916.