the cause of the colic would not have been diagnosed but for vomiting of the calculus. Retention in some part of the alimentary tract is perhaps necessary, or is at least a favourable condition; in both the cases described constipation was a prominent symptom. As the mass of the largest calculus in Brossard's case was much greater than any individual dose given, some accumulation must have occurred, and probably the same thing happened in Dr. Bradbury's case. Unfortunately, the mass was not weighed at once, and it was afterwards lost in my absence during the cleaning of the laboratory. The necessity of retention at some point is thus explained, as it is improbable that very small calculi (which must ordinarily be found, if found at all) would produce symptoms of a serious nature.

The importance of the formation of salol calculi, apart from the serious symptoms to which they may give rise, lies in the fact that the activity of the drug is markedly diminished. Even in the intestine a mass of salol can only be acted on slowly by the intestinal juices and microbes, and probably a great part passes out unchanged. This slow action all along the intestinal tract may be an advantage in some conditions, but it is certainly not in all. The chief fault seems to be in the method of administration. Salol—and the same thing holds good for other insoluble bodies of similar melting point—ought to be rubbed up with some innocuous powder, or given in the form of an emulsion, as recommended by Sahli. In this way the activity of the drug is not diminished, and the possibility of calculous formation is reduced to a minimum.

I express my indebtedness to Professor Bradbury for his kindness in giving me the notes of the case.

REFERENCES.

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A NOTE ON EXPLORATORY INCISION AND DRAINAGE VERSUS PARACENTESIS,

IN THE TREATMENT OF ASCITES; AND EXACT DIAGNOSIS BY PERITONEAL SPECULUM.

By JOHN WALLACE, M.D. EDIN.,

Professor of Obstetrics and Gynecology, University College, Victoria University; and Gynecological Surgeon, Thornton Wards, Royal Infirmary, Liverpool.

IN the address, which as President I delivered to the North of England Obstetrical and Gynecological Society in 1890, I demonstrated the etiology and diagnosis of localised peritonitis—localised ascites in many instances—and its treatment by abdominal section; and further clearly pointed out that in every case there was a well-defined cause, only to be absolutely ascertained by exploration.

In connection with this group of diseases, the word "idiopathic" does not apply. Large experience as gynecological surgeon to the Royal Infirmary very soon drove me to the conclusion that, even so far as general ascites was concerned, the same word "idiopathic"—which is only a term to cover our ignorance—had no longer any *locus standi*. For, by abdominal section the causes of ascites began to be discovered and differentiated, the condition of the peritoneum seen, and the organ at fault brought under the direct sense of touch, and if necessary of vision, thus indicating the treatment with exactitude. Paracentesis abdominis enabled one to detect the existence of a tumour or of some enlarged viscus, as liver or kidney; but the true conditions, even in the hands of the most able and experienced, were at best matters of surmise, frequently contradicted by subsequent *post-mortem* examination. Moreover, I never knew tapping cure ascites, although I have been told of successful cases and the relief given was only temporary at best. Surgically I believe it to be more dangerous than abdominal section, even where the incision is $1\frac{1}{2}$ to 2 inches in length. The latter is carried out carefully on surgical principles, the former is not—it is done in the dark, and no doubt in many cases where collapse has followed its performance some internal viscus had been wounded.

It is hardly necessary for me to trace the evolution of the prolonged tentative course of treatment which led me to the

conclusion that every case of ascites had an originating cause, the immediate one being generally in the peritoneal cavity. If the exciting causes were cardiac, the condition of the liver would be the link in the chain. The kidney can be felt, and its peritoneal covering can be seen, and may show, as I have also observed in the case of the liver, intensified redness and effusion of lymph; or a peritonitis—of an asthenic character—only to the extent of slight suffusion, which fades away in more distant parts of the peritoneum. The ascites, in short, began as a local peritonitis, a perihepatitis, or a perinephritis. Any one of the abdominal viscera may be the *fons et origo mali*. We need not wonder when we consider the close relation of the peritoneum to the whole course of the *prima via*, a fact of special importance in the lower part of the intestine, which is practically a sewer with all the varied conditions of septicism more or less present—the cæcum to wit, as in perityphlitis.

With reference to cardiac ascites, the intimate relationship between heart and liver, and the induction of obstruction to the portal circulation, is the only explanation possible. The normal secretion of the serous moisture of the peritoneum is increased by enormous exosmosis which is not compensated for by equally active endosmosis, plus kidney conditions, pressure, etc., which I need not enter into. Exploratory abdominal section, followed by drainage by means of a short glass drainage-tube, or rubber by preference, if inflammation is advanced, under antiseptic precautions, has these advantages. First, it gives relief from pressure just as well as tapping; secondly, the peritoneal inflammation is cured by drainage but not by tapping, the flow of ascitic fluid being often great, and continuing for a week or ten days, when it gradually ceases. Tympanites subsides, kidneys act, anasarca disappears, and intense relief is given, even should the patient subsequently die from incurable disease such as cirrhosis of the liver, cancer, etc. In hepatic enlargements due to alcoholism I have had permanent cures by laparotomy and drainage where tapping had failed. A two-inch incision through the peritoneum not only taps and drains the ascitic cavity but also the vascular system of the whole peritoneal sac, so that for days the discharge is sero-sanguineous. Be that the explanation or not, we know that opening the abdomen for lesions—pelvic chiefly—where it would be injudicious to proceed further with the operation, the mere manipulation, the flushing, the drainage, and subsequent sero-sanguineous discharge mostly result in cure even when least expected. Such, at any rate, was my experience in cases where I expected no benefit at all.

For bringing under direct vision those parts of the peritoneal cavity at a distance from the incision, I had made for me elongated Ferguson's tubular specula ($7\frac{1}{2}$ inches) of varying diameter. A little manipulation with these easily permits almost any part of the peritoneal cavity to be inspected through a 2-inch median incision.

Case showing use of abdominal speculum, reported by A. J. Wallace, M.D., Clinical Assistant.—A married woman, aged 40, was admitted to the Thornton Ward of the Liverpool Royal Infirmary on August 12th, 1896, complaining of swelling of the abdomen, and occasional swelling of eyelids, of seven months' duration. For about six weeks previous to admission there had been severe abdominal pain. She had borne nine children between 1880 and 1895. Menstruation was normal. The circulatory, pulmonary, and renal systems were normal.

The abdomen was more or less evenly distended, the skin being tense and shining, and having well-marked veins coursing under it. There were some irregularities in the flanks. On palpation and percussion signs of the presence of ascitic fluid were obtained. The pelvic viscera were normal, except that the uterus was bent slightly towards the left, and its mobility less than usual.

It was determined to make an exploratory incision, and this was carried out on August 25th, the peritoneal cavity being opened in the middle line midway between pubes and umbilicus for a distance of two inches. Nineteen pints of ascitic fluid escaped, and then, on exploration, the pelvic contents were found to be quite normal. The liver was considerably enlarged—about two inches in the nipple line—and on its inferior surface two rough areas were felt, from one of which a piece of fibrin was removed by the finger. On viewing these through the tubular speculum, they were seen to be the sites of lymph exudation, whilst the hepatic peritoneum surrounding them was thickened, smooth, and pale greyish-white in appearance. A similar condition existed on the superior surface of the liver, the latter in the intervals between the pale portions appearing congested, and deep reddish-brown in colour. The general peritoneum was much thickened, and its blood-vessels increased in number and congested; but there did not appear to be any more lymph exudation areas.

The cavity was well flushed with warm tap-water, a glass drainage tube placed in the lower angle of the wound, and the latter closed with stout silk sutures.

The discharge of serous fluid was free for the first twelve hours, after which it gradually diminished, and the patient made a good recovery. She was detained in hospital till October 9th for observation, and was then discharged cured, and has remained well since.

This was the first time in this clinic that an acute perihepatitis of both lobes was demonstrated to the naked eye by the abdominal speculum, indeed, so far as I know, it was the first time this and the whole cavity was prospected by the speculum and every part brought into view. The peritoneal suffusion gradually faded until the membrane became comparatively healthy in the hypogastrium and the uterus showed none. The cause we could not determine. She remains healthy. (February 22nd, 1897.)

For some time I have been in the habit of using Ferguson's vaginal speculum to demonstrate the condition of the peritoneum, visceral and parietal, but in certain cases it proved of no service when the laparotomy was made below the umbilicus and hence I simply had it lengthened. In great distension from a large collection of ascitic fluid, in which no tumour can be palpated and no enlarged viscus discovered, I have preferred making the low incision. I shall not detail more cases in full, but mention an instance occurring lately in the Thornton Ward, which justified this course. The abdomen was largely distended, but no cause, proximal or distal, could be discovered. On opening the abdomen, the peritoneum was congested, and this was seen by the Ferguson's speculum to extend downwards but not upwards. The origin was therefore probably pelvic. An ovary with a long pedicle permitting excessive freedom of movement was the only lesion. Its removal with subsequent drainage cured her.

It is desirable to cut down upon any tumour which can be located. An instance showing this was that of another Thornton patient, who had enormous ascitic distension, but an area of resistance and solidity existed in the left flank. She had been tapped sixteen times and was emaciated and weak, and not likely to stand much surgical interference. Left laparotomy over the tumour, and along the outer margin of the rectus muscle, showed it to be an enlarged kidney. Covered more or less with adherent, intensely vascular omentum. The hæmorrhage was so profuse that I was content to ligature the vessels, flush the cavity with hot water from the tap, and place a soft rubber drainage-tube. I saw the patient a year after. She had no recurrence of ascites, although the enlarged kidney remained. It is unnecessary to multiply such instances. There is just one point more. Where the value of incision and drainage stands out prominently, namely, in cases where there is a sense of intense feeling of distension—a bursting sensation with great pain—in which there is tympany, with a small quantity of fluid, tapping under such conditions would be likely to puncture the intestines, and even if it did not, little fluid would run off from blocking of the cannula. Incision and drainage give relief, the latter being profuse. The intensely injected state of the peritoneum in such cases shows a condition approaching acute peritonitis, where, however, I hold the same principles are applicable, and the same surgical treatment is justifiable.

REGISTRATION OF TRADE ACCIDENTS.*

By FRANCIS IMLACH, M.D.,
Liverpool.

THE Workmen's Accident Compensation Bill makes no provision for the registration of trade accidents, neither for their nature and extent or for their causes and disabling effects. Without doubt this unfortunate omission is due to a laudable desire for simplicity, but it makes the Bill impracticable. Within certain restricted trades every injured man is to be compensated, except when the blame is solely and entirely his own. Taking the Home Secretary's estimate that about six million workers come within the scope of the Bill, and adopting a percentage of accidents which obtains among a million of them, we get the annual number of workers who will, themselves or their dependents, be entitled to compensation:

Workmen killed	...	...	...	...	...	...	4,260
totally disabled	...	...	...	...	...	...	2,400
permanently partially disabled	...	...	...	...	...	...	20,040
temporarily disabled for at least three or four weeks	...	...	...	...	...	...	750,000

But the scale of compensation is not fixed, and it is impossible, therefore, to make an accurate estimate of its cost. There is a large range between the maximum and minimum in the case of fatal accidents, and a maximum without a minimum for accidents which are not fatal. The Bill contains no definition of total and partial or of temporary and permanent disability, and there is no attempt to appraise the money value of the several limbs and organs of the body. In the policies issued by the various accident insurance companies of this country all these items are carefully assessed, and in Germany trade accidents are minutely classified by the Government. But in the present Bill these matters are very properly left to the common sense of the arbitrator. Hence it is that the estimates of different actuaries, and even of the same actuary at different times, are notoriously discordant. In the case of miners, for example, while the mine owners in their alarm estimate the probable cost of compensation at 3d. a ton, the Government rates it at 2d. It is, in truth, within the competence of the arbitrators to make the actual cost approximate to either figure.

The provision for arbitration under this Bill is designedly elemental and incomplete. The county court judge is the ultimate arbitrator, and he may call in a medical assessor, at the expense of the employer, to assist him. But the obvious intention of the Bill is that the vast majority of claims shall be settled outside the law courts and without the intervention of the medical assessor. It is hoped that joint committees of employers and employed will form voluntary courts of arbitration. There will be a Government arbitrator to assist in their organisation and conduct. It is not, however, meant that the whole of the work shall be done by the Government arbitrator. So far as possible the adjustment of claims is to be a matter of agreement between masters and men, and hence much depends upon their mutual goodwill.

But it is quite impossible to believe that money claims can always be settled without contention, and even good will must have some objective guidance. Frequent appeals will be made to our profession by the opposing parties. In the majority of cases the injured men will have been attended, not only for the first fortnight but also afterwards, by the medical officers of their friendly societies; and to refuse to listen to these surgeons when doubt is cast upon the nature or reality of some obscure injury would be to court discontent. But if this evidence be received it will be impossible to deny the right of the employer to produce rebutting evidence.

Now, I am sure none of us want a repetition of the scandals of expert witnesses which were so common in the early days of railway travelling. It is neither fair nor reasonable to employ expert witnesses for the express purpose of accentuating any difference of opinion which may legitimately exist. What we want, for the avoidance of scandal, is a uniform system of registration of accidents and of their disabling effects. When the employer and employee can agree to a form of registration the arbitrator or arbitrating Committee would only have to assess the compensation, and forward a record to the Board of Trade. But if the opposing parties disagree their medical representatives might be able to effect a reasonable compromise. And if these fail it would rest with the arbitrator to compare the rival claims, to fill in a registry of the accident as best he can, and to award compensation.

At the present moment returns of accidents in shipping (which is excluded in this Bill) in mines and railways, are drawn out on such different lines that useful comparison is impossible. Unless a uniform system of registration be instituted there will soon be the wildest confusion. Witnesses will be kept hanging about offices and needless expense will be incurred, courts of arbitration will be without guidance, the Government arbitrator will be a law unto himself, one county court judge will never know what another is doing, insurance offices will lack data for calculating their risks, and the country will never know whether the Act is a failure or a success.

The heavy loading of accident insurance premiums is due, in the first place, to the expense involved in the endeavour to

* read at a meeting of the Lancashire and Cheshire Branch of the British Medical Association.