ureter is not necessary when growths originate at a distance, but, as is well known, the areas above and external to its orifice are the sites of election for these tumours. In my experience papillomata arising high on the bladder walls run a very benign course, and I have seen several which have gone for ten years or more and remained small and benign, and therefore good subjects for cystodiathermy. Yet when malignancy does occur excision has to be exceptionally free because the vesical apex is a watershed for the lymphatic fields, and the routes of dissemination are therefore numerous. For this reason, though the growth involves the most accessible part of the bladder wall, the late operative results are not so good as those following operation on growths arising at the site of election (Squier²⁸). Moreover, the dome of the bladder "resembles the silent area of the stomach, the greater curvature, where tumours occasionally become large before localizing symptoms appear" (Scholl²⁹).

The preliminary mobilization of the bladder which I have described is an invaluable method of attack in other operative procedures on the deeper-placed areas of the viscus—as, for example, when a diverticulum has to be removed or a stone in the lowest segment of the ureter calls for open operation. In one of my two cases of papilloma springing from within a diverticulum the whole sac was excised together with the papilloma. In another patient, of whom I have already spoken, the lower end of the ureter contained a recurrent papilloma together with an implantation in the bladder at the ureteric outlet. The ureter was removed by a similar exposure, together with an area of bladder surrounding its orifice.

Whatever method of open operation is employed the tendency for implantation to occur in the wound itself must be guarded against by protecting all exposed surfaces with tetras and swabs soaked in silver nitrate solution (1 in 1,000). The greatest care is exercised in the handling of the growth itself, and every preparation which can shorten the time that it is exposed is undertaken before the bladder is opened. Here again the advantage of the preliminary wide mobilization of the organ is evident. In the final toilet the wound is again sponged with silver nitrate 1 in 1,000, resorcin 50 per cent. (Young and Davis)⁴ or alcohol (Beer), according to the choice of the surgeon.

This is a large and severe operation, yet it represents a material improvement on its predecessors. When the tumour is small it is less difficult, but when it is large the difficulties are much increased. The fact which must strike one, of course, is the wide difference between the treatment of a small benign and a large malignant growth, the one being successful and rapid, the other very dangerous and very difficult. The problem therefore lies in getting the cases in their early stages as soon as ever the earliest haematuria gives warning of a lesion in the urinary tract which calls for cystoscopy. It is the relative infrequency of bladder tumours which militates against their early reference to the surgeon, for the importance of immediate examination is not borne home so easily to the medical attendant. "Had symptomless haematuria been as common as the acute appendix, it would have gone through the same phase as that condition experienced twenty years ago, and would now be invariably submitted to immediate cystoscopy, just as the acute abdomen is promptly submitted to laparotomy."³⁰

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THE COMBINATION OF COLLOIDAL LEAD SELENIDE (D4S) AND RADIUM IN THE TREATMENT OF CANCER.

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In view of the recent increase in the use of colloidal lead selenide (D4S, British Drug Houses) in the treatment of cancer it is considered that the findings to be narrated should not await the second edition of our monograph. This early report is sent out in the hope that other centres may avoid the regrettable result of incorrect combination of this preparation with radiation.

We found that therapeutic α radiation subsequent to administration of D4S was nothing less than disastrous. Five cases were so treated, and the growth of the neoplasm appeared to be promptly and markedly stimulated. The combination of these two methods of treatment was considered to be dangerous, and a warning was given.¹ Two of the cases were as follows:

Case 1.—Male with inoperable carcinoma of lip and involvement of submaxillary glands. He was treated for five months with D4S, which resulted in increased feeling of well-being, gain in weight, fairly marked reduction in size of the growth with disappearance of the glands. Then the case remained stationary, and as the patient had had as much lead as we thought advisable we decided to try the effect of α radiation. He had received only half the usual carcinoma dose when it was found that rapid growth had extended into the tissues of cheek and jaw, and fistulae developed within two weeks. More lead was given, and the growth appeared to be checked, but by this time there was a large ulcer with much sepsis. Ultimately he died, apparently of sepsis, for there were no metastases.

Case 2.—Young female with large medullary carcinoma of breast. After five months of treatment this case was considered to be operable as the growth had become sharply circumscribed, much smaller, and glands had regressed. However, we decided to try α radiation instead. By the time half the dose had been given the mass was very much larger. The radiologist considered this to be oedema at first, but very shortly widely spread nodules in the skin of the chest and consolidation of the underlying lung dispelled optimism. After improving on D4S enough to be a fair operable risk the patient died of general carcinomatosis within six weeks of commencing α radiation.

In three other cases, with variation only as regards site, we had similar results—stationary or diminishing carcinoma began to extend quickly immediately after α radiation.

Later, when radium became available, we had a very similar experience. Some cases, not responding to treatment with D4S, were treated with radium. Marked oedema, shortly followed by necrosis of the tissues around the growth and sepsis, was the result. Two of these cases are worthy of note, for they appeared to give a clue to success in the combination of the two methods of treatment.

Case 3.—Male, recurrence of carcinoma of lip in submaxillary glands. He had been treated with D4S for three months, and had gained in strength and weight, but though the masses had become so soft as almost to fluctuate they were steadily growing. On the advice of one of the leading radium workers, who saw the patient and advised the dose and its application, radon was implanted in screened seeds of 50 per cent. strength. Oedema and necrosis followed immediately, and fungation into the pharynx

Conclusion.

In the meantime it is strongly recommended that α radiation or radium should be applied with extreme caution, if at all, in cases of cancer which have been treated recently with colloidal lead selenide (D4S).

We have to thank Dr. J. A. Murray for Twort carcinoma and Professor Sidney Russ for gifts of radon. The expenses of this research have been met by the Bristol Royal Infirmary Cancer Research Fund.

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HYOSCINE AMNESIA IN LABOUR.

A RECORD OF 24 CASES TREATED BY HYOSCINE ALONE.

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AN outcome of the suggestion that the morphine used in the twilight sleep method was responsible for the asphyxia or oligopnoea in some of the newborn has been the development of a new technique whereby amnesia is produced by hyoscine alone. It was devised by Dr. Bertha Van Hoosen of Lyola University, U.S.A., and consists in giving 1/100 grain of hyoscine hydrobromide as soon as labour is fairly started. Thereafter two more 1/100 grain injections at half-hourly intervals, followed by a similar injection of 1/100 grain every two hours for as long as labour lasts.

This treatment was brought to our notice by Dr. Cargil of Ottawa—a past resident of this hospital—who had tried it on several cases with success. At the instigation of Mr. Lane Roberts this treatment was carried out on 24 cases at Queen Charlotte's Maternity Hospital in July last. The treatment was applied to a sequence of cases where no evidence of any circumstance contraindicating normal delivery was present. This definition covered all patients who had been under treatment for albuminuria during pregnancy, for large doses of hyoscine diminish secretions and throw an added strain on the kidneys.

Analysis of Cases.

Of the cases treated, 16 were primigravidae and 8 were multigravidae. Their ages varied from 20 to 37 years. All except one were occipito-anterior presentations; the one exception was a breech presentation with extended legs, in a multigravida.

The average total duration of labour for primigravidae was 19 hours 43½ minutes; the shortest 6 hours 50 minutes, and the longest 42½ hours. The average total duration of labour for multigravidae, on the other hand, works out at the rather large figure of 20 hours 47 minutes. The shortest was 7 hours 40 minutes; had it not been for the fact that one massive patient had gone 22 days over her dates, producing a 9 lb. 12 oz. post-mature baby after a total labour of 77 hours 20 minutes, the average time would have approximated 9 hours, which is quite a favourable figure. The average second stage for primigravidae was 2 hours 16½ minutes, and that for multigravidae was 41½ minutes.

Twenty of the patients had normal deliveries; 2 patients required the application of low forceps; and in one case the head was assisted over the perineum by the use of 2 units of pituitrin. The breech with extended legs was treated by bringing down one leg and flexing the other at the knee-joint when the cervix was fully dilated. Open ether was administered with apparent safety and ease to the three cases requiring assistance.

An interesting feature of this treatment was the fact that the babies at birth showed signs of active life rather more readily than in normal cases. All were born alive, the majority presenting a high pinkish hue on delivery. Where the cord was round the neck, having to be cut or slipped over the child's head, there was no more blueness

than is usual. The babies in the two forceps cases were "left alone," and they recovered just as ordinary forceps cases do. The baby with extended legs was born in white asphyxia. The treatment of masterly inactivity and a warm bath soon revived it.

No trouble was experienced with the third stage of labour. The average duration for all cases was 15 minutes 12 seconds. The loss of post-partum blood was small, the average being 5½ oz. The highest loss was 10 oz. and the lowest 3 oz.

When to Start.

The best time to give the initial injection of 1/100 grain of hyoscine to primigravidae was found to be when the cervix was taken up and dilated one finger. This must be associated with good regular pains, or the institution of the treatment may tend to delay labour rather than augment the pains. Should the former happen, it is better to wait an hour or so longer, until regular pains return, before giving the second injection, which normally should be given half an hour after the first.

The choice of time for multigravidae was more difficult to determine. They should be started early, as soon as they have definite pains, which must be felt and timed. Dilatation of the cervix may be deceiving, especially if the presenting part is low, for what is sometimes called a "multips os" may be mistaken for commencing dilatation of the cervix. Hyoscine treatment tends to quicken labour; hence if the injections are started late, amnesia may not be produced in a short labour. Most patients remember receiving two injections; so total amnesia does not start until an hour after the beginning of the treatment, though the memory of pains is probably lost earlier.

Course of Treatment.

The effect of the hyoscine becomes moderately noticeable after the second half-hourly injection. The patients enter that state which is so aptly termed "dopy." Compared with a normal patient there is a sharper distinction between the actual pains and the period of quiescence. The pains are characterized by a varied restlessness, some patients attempting to get out of bed. The period of quiescence is spent in quiet sleep. The pupils become dilated and the lips and tongue dry. Either at this time, or later, is noticeable a slight cyanotic flush, which may deepen in colour with subsequent injections, and is more noticeable during a pain.

The massive effect of the three half-hourly injections is not so marked as might be expected. The patients are not sunk in deep unconsciousness. They can be roused from their state, can give their names, and recognize common objects. It is usual for the memory test to be lost here, and it remains so until the end. The recognition test of an object such as a pen may be lost with subsequent injections. Its loss is certainly an indication that hyoscine is acting powerfully, and its early loss may incline one to lessen the dose or prolong the interval between doses; but the mere loss of the test does not seem a danger signal unless it be associated with a deep unconsciousness and stertorous respirations. None of the cases caused any alarm in this direction.

Restlessness, which rarely encroaches upon the interval between pains, is of varied quality. Rarely is it extremely violent. Only one of the patients—one whose build and strength magnified the restlessness—gave any real trouble. Most of the movements are best termed restless, and in some cases a slight deepening of the colour of the cheeks or a movement of a limb may be all that indicates the presence of a pain. The vocal organs may be used; but the voice is rarely raised above a moan or subdued muttering.

As long as the pains continue satisfactorily the two-hourly injections should be continued. Should they weaken or pass off it is better to prolong the interval before the next injection is given; but this is occasioned rarely when the treatment is started at the optimum time.

Here it may be noted that it is essential that the cases be under constant supervision throughout the treatment. A careful watch should be kept upon the bladder, as most patients require catheterization one or more times,