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.

REFERENCE.

¹ *Chemotherapeutic Researches on Cancer.* A. T. Todd and others (J. W. Arrowsmith Ltd.), pp. 49, 54, and 57.

HYOSCINE AMNESIA IN LABOUR.

A RECORD OF 24 CASES TREATED BY HYOSCINE ALONE.

BY

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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,

depending on the duration of the narcosis. Fluids, particularly milk, may be administered by the mouth. Restraint may be needed, but the patients are amenable to kindly yet forceful orders. Mechanical restraint of the arms may be required during the actual delivery in order to avoid a tear of the perineum or the soiling of the sterile clothes; but the perineum may be stretched and the "occiput flexed" without any added discomfort to the patient.

In view of the occasional idiosyncrasy sometimes found in using hyoscine it will be of interest to recount that while no patients were found intolerant of the drug, two patients exhibited definite hallucinations, which, curiously enough, did not appear until immediately after the delivery of the placenta. This condition gave rise to no anxiety. It disappeared with the dawn of consciousness, and all the mothers have since been normal.

Results.

The most interesting part of the whole treatment is visible when consciousness returns some two to three hours after delivery. The mothers look remarkably fit and well. There is hardly anything in their facial appearance to suggest that they have been through a labour and delivered of a child. Most remain oblivious of the fact that they possess a baby until they are informed or happen to place a hand upon the abdomen and find the contour changed. Then their smiling thanks are worth any added work entailed by the accoucheur.

Complete amnesia was obtained in 20 cases. One primigravida, who had had three injections, only remembered six pains and the birth of the baby, which was painless. One of the patients, delivered by forceps, only remembered the mask being placed upon her face. This island of memory, similar to two other small islands of memory in the two remaining cases, seemed directly attributable to a delay in giving the last injection owing to an apparently imminent birth. Experience showed that the last injection might be given in safety, even when the head was distending the perineum. In patients under the influence of this treatment the *vis a tergo* seemed purely uterine, and the final extraordinary expulsive efforts were more or less lacking and not accompanied by increased abdominal tension. This often led to a relatively slow stretching of the perineum.

The Application.

Dr. Van Hoosen gives the lengthy name of "scopolamine-narco-anaesthesia" to her treatment; but in view of the rather unique narcotic and anaesthetic effects of hyoscine I venture to suggest that the name of "hyoscine amnesia" —or "scopolamine amnesia," if you will—would be more all-embracing and suitable.

Conclusion.

It has been stressed already that the patients must be under constant supervision. Apart from the usual nursing attendance, restraint may be needed for restlessness during the pains. Extra help may be required at the time of delivery unless the patient is secured with suitable appliances, which limit the use of her hands and the tendency of her body to undo the left lateral position in which she has been placed. Against this can be placed the valuable assistance rendered by repeated kindly, simple, yet forceful orders. It is often the hefty type which causes trouble; the thin, nervous woman, for whom this treatment seems eminently suitable, rarely gives any trouble.

Advantages of Hyoscine Amnesia.

1. The treatment is simple to carry out.
2. There is a fair certainty of obtaining loss of memory of the delivery and of the worst of the labour pains.
3. There is no apparent ill effect on the child.
4. The treatment has a tendency to shorten labour as a whole.
5. There is no apparent increased tendency to the use of low forceps.
6. There is a shortening of the third stage of labour and a small loss of post-partum blood.

RESPIRATORY FAILURE DUE TO CEREBRAL ABSCESS.

BY

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AMONG the modern advances in medical science the pathology, diagnosis, and treatment of intracranial lesions occupy a high position, but the case of cerebral abscess described below presents some unusual features, and is, I think, worthy of being recorded. The following notes are taken from the case records.

H. R., male, aged 25, was admitted to Monsall Fever Hospital at 10.15 p.m. on May 2nd, 1929, certified to be suffering from meningitis. Several days previous to admission he had complained of left earache, but had continued at his occupation of fruit-market salesman. He returned from work at midday on the day of his admission complaining of severe headache and backache, and soon afterwards began to feel drowsy. When seen by his doctor he was thought to be suffering from meningitis, and was sent to Monsall Hospital.

On admission he was in a drowsy, semicomatose condition, and could be roused with difficulty, but quickly returned to his drowsy state. Both pupils reacted to light, but the left pupil was slightly smaller than the right one. There was no strabismus or nystagmus. There was slight retraction of the head and marked nuchal rigidity. The tongue was dry and furred, but the throat was clean. No rhinorrhoea or otorrhoea was present, and no tenderness was elicited over the mastoid processes. Kernig's and Babinski's signs were present. No albumin or sugar was found in the urine. Examination of the heart, lungs, and abdomen revealed no lesion. Temperature 100.2°, pulse 100, respirations 28.

May 3rd. Patient was drowsy; there was no delirium or irritability; he could be roused sufficiently to answer questions rationally, but only after a definite latent period; complained of suboccipital pain; pupils normal and reacted to light; no strabismus or nystagmus; no otorrhoea; Kernig's and Babinski's signs present; temperature 101°, pulse 104, respirations 23. Under local anaesthesia lumbar puncture was performed. The cerebro-spinal fluid was under pressure, and 40 c.cm. of slightly turbid fluid were withdrawn. Examination revealed numerous polymorphonuclear leucocytes, but no organisms were found in stained films, and cultures on blood agar yielded no growth.

May 4th. Patient not so drowsy and nuchal rigidity not so marked; complained of severe frontal headache; herpes of upper lip and pinna of right ear; temperature 98.6°, pulse 68, respirations 20.

May 5th. Condition unchanged; no evidence of aural lesion; headache continued; temperature 99.4°, pulse 76, respirations 20.

May 6th. Severe frontal and suboccipital headache; no head retraction, but definite rigidity of neck muscles; slightly drowsy; no incontinence; pupils normal; no mastoid tenderness, but slight reaction to hydrogen peroxide in right ear; temperature 99.6°, pulse 56, respirations 22. Lumbar puncture was repeated, the cerebro-spinal fluid was not under pressure, and 15 c.cm. were withdrawn. The fluid showed very slight turbidity, but no organisms were found, despite the continued presence of polymorphonuclear leucocytes. The visiting aural surgeon was asked to examine this case, and he reported as follows: "Both tympanic membranes opaque, but no pus in either and no bulging. No indication of aural cause for meningeal condition." The following day the condition was unchanged; temperature 100°, pulse 56, respirations 20.

May 8th. General condition showed slight improvement; temperature 98°, pulse 52, respirations 24. On May 9th the nuchal rigidity and headache were less; he was rational in conversation, but not taking much interest in his surroundings; there was no paralysis or paresis; pulse still slow; temperature 97.8°, pulse 52, respirations 20.

May 10th. At 10 a.m. I arrived at the ward in response to an urgent call to find the patient unconscious and cyanosed. Respiration had ceased, but the heart was beating regularly, though slowly. There was general spasticity of the muscles, but no twitching; both pupils were fixed, the right contracted and the left widely dilated; there was no strabismus, no nystagmus, and the superficial reflexes were absent. A gag having been inserted into the mouth artificial respiration was begun and the cyanosis rapidly disappeared. Strychnine and pituitrin were administered hypodermically. Gradually the limbs became flaccid, and both pupils were now dilated and fixed. Artificial respiration was maintained, but no attempt at natural respiration occurred, though the heart's action continued to be regular and forceful. While a careful watch was kept on the condition of the heart, artificial respiration was discontinued till the patient was "black in the face," but artificial respiration had to be started again. At the end of one hour the condition was unchanged. Cistern puncture