SIMPLE APPARATUS FOR MEASURING OXYGEN IN TENTS

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The percentage of oxygen in an oxygen tent can be measured by the following method. The only requirements are: (1) an alkaline solution of pyrogallol; and (2) an all-glass Luer syringe with 2 ml. graduated in fifths and fitted with an airtight cap. This cap can be made by cutting off the mount from a Luer needle and closing the end with solder. The plunger of the syringe must fit well and should be used wet, so as to make a close seal.

To measure the oxygen the cap is removed from the syringe and a sample of the tent's contents drawn into it by withdrawing the plunger well past the 2-ml. mark on the syringe barrel. The cap is quickly replaced, and the syringe can then safely be carried over to the pyrogallol solution, which should be kept near the sink. The syringe is held nozzle downwards, the cap removed, and the plunger carefully lowered until it reaches the 2-ml. mark. The syringe nozzle is then dipped below the surface of the pyrogallol solution and a small amount drawn into the syringe. The exact amount is unimportant, but 0.5 ml. will suffice for the syringe we describe. Care must be taken not to admit air.

The cap is refitted whilst the syringe is held still pointing downwards.

The syringe is then tilted backwards and forwards a few times and finally held with the nozzle pointing upwards. The plunger will have been sucked in to take the place of the oxygen absorbed by the pyrogallol solution (Fig. 1). The reading is then taken from the top of the fluid. It is important that the reading be taken from the bottom of the meniscus, otherwise in a small syringe it will be too high. The fluid is dark and the meniscus not always easy to see.

Any all-glass syringe of the Luer type can be used provided it is graduated into fifths, tenths, twentieths, or hundredths, to enable the rise in the fluid's surface to be readily

FIG. 1.

converted into a percentage. We found a tuberculin syringe with 1 ml. graduated in hundredths to be unsuitable, because with such a narrow barrel the weight of the plunger or the barrel makes a 5% error in the reading whether the syringe is held by the barrel or by the plunger.

The pyrogallol solution consists of 5% pyrogallol and 10% NaOH in distilled water. The solution should be made up freshly each day and kept in an airtight bottle. For convenience in the wards we have made a stand resembling

an inkwell stand, consisting of a block of wood with three circular sockets drilled into it to hold three bottles and with a groove cut in front in which to rest the syringe (Fig. 2). The first bottle contains 20% NaOH solution, the

FIG. 2.

second 10% pyrogallol, and the third is a screw-cap bottle with a rubber washer fitted inside the cap to make it airtight. Each morning approximately equal parts of the caustic soda and pyrogallol solutions are put into the screw-cap bottle and mixed. If the bottle is well closed each time immediately after being used the solution will remain active for 24 hours or more.

Medical Memoranda

Thrombocytopenic Purpura Recurring in Successive Pregnancies

Patterson (1946) has drawn attention to two types of thrombocytopenia—a chronic type in which there is a history of an abnormal tendency to bleed and persisting evidence of thrombocytopenia, and an acute type in which recovery is thereafter complete. Various authors (Mosher, 1923; Polowe, 1944; Patterson, 1946) have reported that in the chronic type of the disease in pregnancy the hazards to the mother and foetus are considerable, the maternal mortality in the cases recorded being 55%. Chalmers (1948) described an acute case of thrombocytopenic purpura in which the condition was mild and had no serious complications. Shipton (1950) reported a further case of the acute type necessitating splenectomy and repeated blood transfusions, and gave a comprehensive review of the literature. The patient made a complete recovery.

The following case of thrombocytopenia has two points of interest. It occurred on the only two occasions when the patient was pregnant, and in the first pregnancy it was associated with a toxæmia.

Toxæmia occurring in chronic thrombocytopenic purpura has been regarded as a serious complication on account of the possibility of placental infarction, giving rise to a severe ante-partum haemorrhage.

CASE REPORT

The patient, aged 24, gave no history of previous attacks of purpura or haemorrhages. The periods were normal.

First Pregnancy.—This progressed satisfactorily until the 37th week, when she developed a toxæmia, being admitted to Guy's Hospital on April 21, 1950. The toxæmia improved with rest in bed. On April 27 purpuric spots were found over the abdomen and she had a slight epistaxis. The following day the rash had extended over the arms and lip. The spleen was not palpable and Hiss's test was