and outwards along the sixth rib. The costal cartilages were cut on the bevel to prevent overlapping when the chest was closed. The right pleural sac was stripped away and a window raised of

bulk by removing a series of wedges of tissue until it had reached reasonable proportions. It was finally removed by further digital dissection. As the upper pole seemed to be the most likely place for a blood supply, since none had been encountered, a clamp was placed across the last piece of tissue which held the tumour. To avoid infection the window in the chest was closed without drainage and the air aspirated out of the cavity to prevent surgical emphysema. Sero-sanguinous fluid collected during the next few days, which I aspirated on one occasion, but, as is so common in all chest operations, could not find any fluid on a subsequent attempt. The fragments of tumour when collected were found to weigh 12 oz.

My colleague, Dr. L. C. D. Hermitte, undertook the examination of the specimen, and his report is as follows:

"Sections from various parts of the tumour show the structure of a multipotential teratoma. The following structures are present: (1) fatty areolar tissue; (2) cartilage; (3) ossifying cartilage; (4) bone marrow; (5) thymus gland tissue complete with epithelial pearls; (6) branching tubules lined by semi-stratified ciliated epithelium with plain muscle, cartilage, and numerous glands in the walls suggestive of bronchial epithelium; (7) tubular collections of melanin pigment; (8) cystic spaces lined by cubical epithelium forming papillary processes, the nature of which is not clear: they resemble the pink-celled cyst of the breast; (9) areas of connective tissue containing calcospheres."

The child made an uninterrupted recovery, and was discharged on April 6.

A radiograph taken three months after operation showed a perfectly normal chest. There appeared to be a tendency to form keloid in the scar, so x-ray therapy was instituted.

In a review by Lloyd Rusby (1944) of dermoid cysts and teratomata of the mediastinum based on a study of the world's literature, it is stated that only

some 245 cases, exclusive of six original cases, had been published between 1827 and 1939.

REFERENCE

Rusby, N. Lloyd (1944). *J. thorac. Surg.*, **13**, 169.

chest wall. This revealed a large yellowish-white tumour, which was found to be relatively free on blunt dissection below, but was more firmly attached towards the upper pole. Owing to its large size it would have been necessary to enlarge the opening in the chest; so, to overcome this difficulty, the tumour was reduced in

Medical Memoranda

The Incomplete Antibody in Rh Immunization

The recognition of an Rh antibody which combines with homologous red cells *in vitro* but does not agglutinate them was announced independently in June of this year by Wiener and by one of us.

The "blocking" antibody (Wiener, 1944) or "incomplete" antibody (Race, 1944) is specific for one part of the antigen complex of Rh-positive cells. If this antibody could agglutinate, it would be of the type which has been variously called anti-Rh standard, anti-Rh 85%, anti-Rh₀, Δ, and rho. It reacts with the antigen common to the genes Rh₁, Rh₂, Rh₀, and the rare Rh_z. However, the complexities of antigenic components, genes, antibodies, and nomenclatures need not be gone into here.

Wiener has pointed out that this "blocking" antibody can be detected in some cases in which immunization is suspected and the mother or recipient is Rh-negative, but in which no antibody can be found by the ordinary means. The purpose of this note is to draw attention to this latest method of detecting immunization of an Rh-negative person and particularly to Wiener's technique, which is more sensitive than that described by Race. The following is Wiener's description of the test.

"The technique of the test is simple. First, one drop of a 2% suspension of Rh-positive cells and a drop of the patient's serum are mixed in a small test-tube and allowed to react in a water bath at 38° C. for 30 to 60 minutes. Then a drop of a suitable dilution of an active anti-Rh serum is added, and after an additional incubation period of 30 to 60 minutes the reactions are read. If blocking antibodies are present no agglutination will occur, or the clumping will be markedly weakened."

The example given of a suitable dilution of an anti-Rh serum is 1:5, when the original titre was 60.

We have tried Wiener's technique on a number of sera collected from Rh-negative women over about two years and stored at minus 20° C. Whereas Wiener placed the tubes in a water bath we used an incubator at 37° C., re-suspending the sedimented cells when adding the active anti-Rh serum after the first period of incubation. Of 19 cases in which the history sounded typical of haemolytic disease and yet in which no anti-Rh had been detected the incomplete antibody was found in 6. Of 26 cases in which a trace of anti-Rh had been detected the incomplete antibody was found in 19.

These results confirm the importance of testing for the presence of the incomplete antibody in any serum from an Rh-negative woman in which no anti-Rh can be found. The less sensitive the technique for detecting anti-Rh agglutinin the more useful will be the test for the incomplete antibody. In some cases it will yield the only evidence of immunization, and in others will strengthen that given by the finding of only a trace of agglutinin.

A fairly extensive search involving more than 100 mothers with histories suggesting haemolytic disease has failed to give any evidence of incomplete forms of the other three types of anti-Rh agglutinins.

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