light reaches the plate. It is quite an ingenious device. I am not sure how old it is but I think it could have been made before the First World War. I have no information on it and would be pleased to hear from anyone who could enlighten me on the instrument, its date, its inventor Lee or the manufacturing or supplying firm of AL Hawkins Ltd, London. Another machine "The Sedigraph" made by a Swiss firm after the Second World War acted in a similar fashion with rather more sophistication. One of these instruments is also in the collection.

The collection of old instruments now numbers about 1000 items which, it is hoped, will form a valuable asset in the new Medical Department of the Science Museum. If anyone has such instruments or apparatus that are no longer required I should be glad if they would get in touch with me.

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False positive latex tests for cryptococcal antigen in cerebrospinal fluid

The detection of cryptococcal polysaccharide antigen in CSF or serum is an essential part of the laboratory diagnosis of cryptococcosis with a positive result having diagnostic, prognostic, and therapeutic value. The latex test for cryptococcal antigen detection was originally described by Bloomfield *et al*[1] and either the original test or a subsequent modification, using sensitised charcoal particles,[2] are widely used.

This report emphasises the occurrence, significance and subsequent elimination of false positive latex tests for cryptococcal antigen in cerebrospinal fluid (CSF), and their association with the presence of rheumatoid factor.

METHODS AND PATIENTS

The technique used in our laboratory for detecting cryptococcal antigen has been described elsewhere[3] and is essentially a modification of the original method.[1] The organism used to sensitise rabbits by intravenous route for the production of specific antiglobulin is a serotype A strain of *Cryptococcus neoformans*. Sera, but not CSF causing agglutination of sensitised latex particles are treated with 0·01 *M* dithiothreitol (DTT) and the test is repeated. However we have recently noted a number of false-positive CSF cryptococcal latex tests (LA) (Table). When CSF was pretreated with 0·01 *M* dithiothreitol (DTT) all three positive tests became negative however this procedure had no effect on eight culture proven positive CSF samples. In addition two patients (2 and 3) had similar false-positive LA titres in serum, 1/5 and 1/25 respectively, which were also eliminated by pretreatment with DTT. In all these patients rheumatoid factor (Eosin latex test, Difco, Michigan) was present in CSF as well as serum.

DISCUSSION

False-positive[4 5] as well as false-negative[6] LA tests for cryptococcal antigen have been described previously. Bennett and Bailey,[4] for instance, reported that 9·5% of 252 specimens of serum and cerebrospinal fluid from patients with presumed cryptococcosis showed false-positive responses. In the majority of cases these reactions were seen in serum samples. However, they noted that certain patients with low titre CSF latex tests had negative complement fixation tests for cryptococcal antigen. It has been suggested that rheumatoid factor (RF) or similar substances are responsible and their activity can be eliminated by dithiothreitol (DTT).[7] The latter substance splits IgM molecules of RF and prevents the subsequent agglutination of globulin-sensitised particles. Dolan[8] has also reported false-positive reactions in serum (2·8%) and CSF (1·4%). The sera gave positive reactions using particles coated with non-immune rabbit globulin.

Both IgG and IgM rheumatoid factors have been demonstrated in CSF in the rare complication of rheumatoid disease, pachymeningitis,[9] probably as a result of local synthesis. Alternatively serum RF may diffuse through inflamed meninges.[9] Sarcoidosis, lymphoma and systemic lupus erythematosus, which have all been associated with cryptococcosis, may involve the meninges. They are also amongst a group of disorders which may have low titres of serum RF[10] and it is not inconceivable that the latter may cross the blood-brain barrier under certain circumstances. Hence we are reporting these cases to emphasise the occurrence of false-positive cryptococcal LA tests in CSF as well as serum which can be removed with DTT and which may be associated with the presence of rheumatoid factor. We suggest that where it is not routine practice already, CSF samples as well as sera positive for cryptococcal antigen by latex test should be treated routinely with DTT.

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Results of latex tests for cryptococcal antigen

Patient	*Age (yr)*	*Sex*	*Underlying disease*	*CSF tests*	
				*LA**	*LA + DTT†*
1	39	M	Encephalitis ? cause	1/5	Neg
2	55	M	Behçet's syndrome	1/5	Neg
3	30	M	Rheumatoid arthritis	1/10	Neg

* Latex agglutination test for cryptococcal antigen.
† Latex test for cryptococcal antigen pretreated with dithiothreitol.

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Immunocytochemistry of gastric mucosal blood groups

We read with interest the findings of the detailed study by Kapadia *et al*[1] on the immunocytochemistry of gastric mucosal blood groups.

We studied gastric carcinoma and agree that only a minority of these cases show loss of blood group antigens.[2] We were staining the alcohol-soluble glycolipid blood group substance present on the endothelial cells of all subjects, regardless of secretor status like Kovarik *et al*[3] and Davidsohn *et al*[4] 1971 and suppose that Kapadia *et al* were staining the water-soluble glycoprotein component—no mention is made of small vessel staining. We found changes in some tumours involving loss of A or B substance and persistence of H (loss of terminal residue). The peroxidase technique is more sensitive and we are presumably staining a different antigen but would suggest that non-secretors may express certain blood group antigens in gastric mucosa. The exploration of the hypotheses suggested on page 334[1] will require a comprehensive study of all types of A, B, H antigens.

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Dr Kapadia and colleagues reply as follows:

Our study (see reference 1 above) was largely concerned with blood group A, H, I and i activities of the mucus secreting epithelial cells of the stomach. The predominant material showing immunofluorescence would be glycoproteins. The conclusions were based on reactivities of the tissue sections with one each of the following antisera: anti-A, anti-H, anti-I(Ma), anti-I(Step) and anti-i(Den). Precise measurement of the amounts of immunoreactive material is not possible in tissue sections and it is likely that the staining reactions reflect the fine specificities and the affinities of antibodies in a given antiserum.

Additional problems in quantitation arise concerning glycolipids carrying the blood group antigens. These are extracted to varying degrees by formalin-fixation and paraffin-embedding procedures. It is possible that the proportion of glycolipids is increased in the tumour cells. Thus the staining reactions with endothelial and tumour cells reflect material that survives the extraction procedures.

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Prognostic value of measurement of elastosis in breast carcinoma

We are impressed by the correlation obtained by AJ Robertson and colleagues (July 1981)[1] between visual estimation of breast cancer elastosis, and that generated by Quantimet 720 analysis of the same sections of the material.

However, we are concerned that lack of homogeneity of elastosis in breast lesions may be responsible for the apparent absence of prognostic value. The topographical distribution of elastic fibres in benign[2 3] and malignant[4] breast lesions exhibits a focal, discontinuous character. In an earlier study[5] of breast cancer elastic we found poor correlation between gravidimetric assay of insoluble elastin in tumour samples and visual estimation of elastosis in histological preparations from elsewhere in the same carcinomas. Furthermore, even at microscopic level there are at least two types of tumour elastosis. One occurs in the vicinity of endogenous[6] ducts, blood vessels and interlobular stroma, and the other, around neoplastic[7] invasive carcinoma cells.

Before concluding that elastosis bears no relation to breast cancer prognosis, we feel that the elements of elastotic lesions should be examined individually and in their topographical context.

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