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Editorial

The problem of "added tests"

It is often tempting in clinical laboratories to add extra tests to those that have been requested once the results of the originally requested tests are known. It is sometimes felt that it is in the interests of the patient to continue with these extra investigations, partly because it avoids the necessity for the collection of a further blood sample and partly because it saves delay in getting to the answer to the problem. Also the view has often been expressed that the request for tests to the clinical head of the laboratory department is identical to a referral letter to a physician or surgeon, allowing the head of department to carry out all those investigations that seem to be relevant, irrespective of whether they are significantly in addition to those tests that were originally requested.

Of course, those laboratories that are paid directly per item of service may not be subject to this temptation; the requester may not feel that additional expensive tests should be done without first discussing matters with the patient. Under these circumstances the laboratory may have to wait until the patient has responded and agreed the added costs; it may be possible that the sample can be kept under appropriate conditions until this confirmation has been received. But the temptation is particularly strong in those laboratories whose major purpose is serving patients who are not directly responsible for meeting the costs of the tests.

There are certain areas where it is entirely acceptable to add further tests. Thus a request for thyroid function tests will initiate those first-line thyroid function that the laboratory has indicated in its user manual. If this first-line test is just TSH, then a suppressed TSH result will initiate measurement of thyroxine to attempt to confirm thyrotoxicosis; if the thyroxine level is in the euthyroid range, a further test for tri-iodothyronine is legitimate in order to investigate T3-toxicosis. Similarly, a request for liver function tests that turn out to be abnormal may initiate further tests of liver disease, especially if the initial liver function test profile is relatively limited; but additional tests including gamma-glutamyl transferase and the alcohol concentration without first getting the patient's agreement are of questionable ethics.

In my own laboratory the liver function test profile includes measurement of total protein, albumin and globulin levels. Sometimes the globulin results are low in association with other abnormal liver function tests. We have previously gone on to do serum protein electrophoresis on such samples to identify the cause of the low globulin level. Often it is caused by very low alpha-1 globulins, suggesting the possibility of alpha-1 antitrypsin deficiency as a possible cause of the liver disease. If this is seen to be the situation alpha-1 antitrypsin phenotyping has been arranged; all these addition tests were carried out without further reference to the requesting clinician or the patient as they are all related to finding the cause of liver damage, the main reason behind the initial request. This is probably acceptable but on the borderline of ethical acceptability as the results may inform the unwitting patient of a dormant inherited deficiency. For example, a complication arose with a patient whose sample was electrophoresed not for liver function tests but for possible paraproteinaemia. The was no paraprotein, but the globulin concentration was low, the alpha-1 band was suppressed and in due course the patient was found to be alpha-1 anti-trypsin deficient. The haematologist who requested the initial tests for paraproteinaemia was not happy to receive this indication of an unsuspected inherited deficiency in a patient with whom such a possibility had not been discussed. Clearly this process in this particular patient had been one which was outside strict ethical guidelines.

Another example is when very high IgG levels are found; this could be associated with HIV infection. It may be the laboratory's duty to inform the requesting physician of this possibility, but it would be outside ethical guidelines to confirm such a condition without the patient's consent.

On the other hand, hormone profiles in females subjects of reproductive age can sometimes indicate the possibility of pregnancy – low levels of FSH and LH, raised oestradiol and prolactin. In this case I believe that is justified in proceeding with measurement of HCG in order to confirm this diagnosis; it is important for the woman and for the developing foetus that knowledge of the pregnancy is available as soon as possible. Clearly the patient should not be informed directly, but the requester should so that he/she can talk over the situation with the patient.

In summary, adding tests to those already requested can lead to ethical dilemmas. But laboratories should be allowed to do this when the added tests are merely extensions of the original request and in the same field of medicine. Searching for non-related diseases on the basis of initial abnormal tests should not be followed up immediately; instead the requester should be informed of possible causes of the abnormalities detected and left to discuss them with the patient – the patient can then decide whether he/she wishes these further tests to be carried out.

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