URINARY SPECIMENS

COLLECTION AND SUITABLE CONTAINERS.

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The collection of urine specimens for investigation, either in the Ward Test Room or Laboratory, is a very frequent occurrence; in fact, with many types of cases it will be an essential daily routine measure. Therefore it is highly desirable that the technique and method employed in such a frequent procedure should be a sound one. Unfortunately familiarity, as it were, tends to breed contempt, and no other type of specimen is so liable to be carelessly handled. While we will all show most painstaking care in handling, say, a fæcal specimen, from a known case of typhoid, it must be confessed that rarely will anything like the same degree of care be lavished on a routine urine specimen. It is so easy to overlook the improbable, but nevertheless possible, fact that such a specimen might have come from an unsuspected typhoid "carrier"; such instances have occurred.

Types of Specimen.

It is convenient to divide urine specimens into three types: the 24-hour, the random, and the catheter specimen. The 24-hour specimen is, of course, the whole volume passed over a 24-hour period, usually from 8 a.m. to 8 a.m. the following day. Such a specimen is often required for laboratory investigation, and it is essential that the whole of the urine passed should be included; should it be impracticable to send the whole volume for investigation, the specimen should be well mixed, and a properly representative sample sent for investigation, together with a note of the total volume passed over the 24-hour period. These types of specimens are required for full chemical investigation, and in the investigation of urinary tuberculosis and suspected enteric carriers; they are also valuable for observation of the physical properties. The random specimen is, as its name suggests, one taken at any time of the day, as, for example, when the patient is going to theatre, or perhaps on admission; it is also convenient, if not strictly accurate, to include the morning specimen in this type; such specimens are usually required for routine chemical and cytological examination. The third category, the catheter specimen, is absolutely essential when bacteriological examination is required and a female patient is concerned. It is, of course, necessary that such a specimen be collected into a sterile container, and suitable precautions taken during collection to prevent contamination. During transit to the laboratory the specimen must be protected from contamination by air-borne bacteria; in other words, a suitable cover must be provided. The only vessel which is really suitable for this purpose is some form of bottle with a screw-on cap; the 6-oz. medicine bottle is easy to sterilise and is very suitable for this purpose. Incidentally, it is unwise to use a cotton-wool plug to close the bottle; the screw-on cap is much better—during transit the urine may slop and wet the plug, and if there is any delay, contamination is highly probable. With male patients, when bacteriological examination of a urinary specimen is required, it is not always necessary, or for that matter desirable, to send a catheter specimen. An "interrupted" specimen will often prove satisfactory; certainly it is desirable that this should, at least, be tried in the first instance.

Containers.

While the conventional conical or the straight-sided glass cylinder may be very convenient for Ward Test Room work, it is not the container of choice for specimens sent to the laboratory. Certainly it should never be used for specimens required for bacteriological examination; it is difficult to sterilise and almost impossible to protect from contamination. Another important point in these days of supply difficulties is that these containers are very liable to breakage, particularly if they have to be carried any distance. As a urine specimen container, the 6-oz. medicine bottle with a screw-on metal cap fitted with a rubber liner is a much more desirable alternative. They have a number of advantages, nothing like the same breakage rate, easy to sterilise in bulk, the cap prevents contamination of the specimen and danger of leakage, and so infection, during transit. The writer has employed these containers with complete success for a number of years, and it is our practice to supply them clean and sterile to the wards; there is no danger of an unsterile container being used for a specimen required for bacteriological examination. A final point; storage of these containers takes up little room, a matter appreciated by a medical Ward Sister who may require a considerable stock. A much larger size container is necessary for a 24-hour specimen, and a Winchester bottle is a most convenient collection vessel for this purpose; it is, however, desirable to select Winchesters with glass stoppers and not corks, as the latter are difficult to clean.

Labelling the Specimen.

Correct and full labelling of the specimen is, perhaps, rather an obvious requirement, but in the stress of work on a busy ward mistakes have been known to occur. Such unfortunate instances may have severe repercussions on the patient. When urine glasses are employed it is very undesirable to cover the specimen with a paper top, labelling the specimen by writing the patient's name on this; these covers are often lost during transit.

Urinary Preservatives.

Certain substances, such as formalin, boric acid, toluene, etc., may be added in small amounts to the urine as a preservative. In hospital practice their use is rarely necessary, and they are best avoided, as some of them act as reducing agents and are liable to cause false sugar reactions. In hot weather the collection of a 24-hour specimen may present its problems, and the addition of 20 c.c. of toluene to the container will do no harm.

CLAUDE LOUIS BERTHOLLET.

This month (December) is the bi-centenary of the birth of the noted French chemist, Claude Louis Berthollet, who investigated the composition of ammonia, prussic acid, and sulphuretted hydrogen, and suggested that chlorine be employed for bleaching purposes. He made a valuable contribution to the problem of Chemical Physics, and his laboratory was much frequented by the leading scientists of the day. He was the founder of the theory of chemical affinity, and taught France the process of smelting and the conversion of iron to steel.

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