The Loss of Pathological Specimens: Incidence and Causes

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BACKGROUND  Tissue biopsy loss can have devastating clinical and legal consequences.

OBJECTIVE  To evaluate the incidence and cause of tissue biopsy loss.

METHODS & MATERIALS  The study followed biopsy specimens taken by one plastic surgeon in an outpatient clinic between October 2001 and April 2005. Four thousand two hundred minor surgical procedures were performed, and 4,400 biopsy specimens were sent to pathology. In case of specimen loss, a formal investigation was performed.

RESULTS  Five specimens were reported as lost during the period. Two were retrieved, two were lost probably because of failure to insert the pathology specimen into the container, and one was lost in the pathology laboratory during processing. Overall incidence of specimen loss was 1 in 1,466 (0.068%).

CONCLUSIONS  In this study, we identified the critical point of specimen loss to be noninsertion of the specimen into the container by medical staff. To prevent future errors at this critical point, strict guidelines such as immediate insertion of the specimen into the container and signing on the container confirming that the specimen is in the correct labeled container at the end of the procedure are recommended.

The authors have indicated no significant interest with commercial supporters.

Loss of tissue biopsy can have devastating clinical and legal consequences. Luckily it occurs quite rarely.

In our search of the available literature, we were unable to find any references concerning the incidence or causes of loss of pathology specimens. This study was undertaken to evaluate this problem.

Material and Methods

The study followed the biopsy specimens taken by one plastic surgeon in an outpatient clinic between October 2001 and April 2005.

All pathology specimens were inserted into a plastic container containing buffered formalin 4% and sealed using a cap. A pathology request form including patient name, age, clinical data, and clinical diagnosis was attached to each container.

The nursing staff and the surgeon had separate logbooks documenting every biopsy specimen sent to pathology. The systems were created to separately document the biopsied specimens sent to pathology.

All the pathological reports were crosschecked between the two registration systems.

The pathology specimens were kept in the clinic until the next day, when a messenger took them directly to the laboratory.

Pathology reports were routinely received within 1 to 3 weeks. If a report did not return within this time frame, the surgeon would inquire at the laboratory. In most instances, there was a slight delay at the laboratory. In rare cases in which the pathology specimens were reported lost, the container was returned to the clinic for confirmation of the loss by the surgeon. Patient details were compared between

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the different registration logbook systems to make
sure that the specimen had been taken and sent. The
pathology laboratory was asked to make sure that
there were no containers or specimens unaccounted
for on the date the biopsy was taken.

A formal investigation of all lost specimens was
performed.

Results

Between October 2001 and April 2005, 4,200 minor
surgical procedures were performed, and 4,400 bi-
opsy specimens were sent to pathology; five speci-
mens were reported as lost.

Two cases were retrieved. In one case the specimen
was found stuck to the cap of the biopsy container.
In the other case, the pathology form was labeled
with another patient's name. The incidence of
specimen loss in this community setting was three
out of 4,400 (1/1,466) or 0.068%.

In two cases, it was found that the forms were
properly filled in. The containers with the patients’
names had arrived at the pathology laboratory, but
the pathologist reported the container to be empty.

The procedures described above had all been per-
formed, but the specimens were not recovered. It
appears that the surgeon or the nurse never inserted
the pathology specimen into the container in two of
three cases (66%) (2/4,400, 0.045%). In the last
case, the specimen arrived at the pathology labora-
tory with the patient’s name and a correct form but
was lost during the processing of the specimen. The
laboratory technologist claimed the specimen’s small
size as the cause of loss (1/3 cases, 33%, or 1/4,400
cases, 0.023%).

Discussion

The overall incidence of specimen loss in a commu-
nity setting was 1 out of 1,466 (0.068%) cases
(3/4,400). The most common cause appeared to be
failure of the surgeon or the nurse to insert the
pathology specimen into the container (2/3, 66.6%
cases); in one case, the specimen was lost in the
laboratory (1/3, 33.3%).

The Israeli guidelines for specimen collection
(issued by the Israeli Health Department in 1999)
are strict regarding acquiring, marking, registering,
and transferring specimens, but these guidelines
do not give specific instructions as to how this
should be done.1 In this study, we identified the
critical point to be the insertion of the specimen
into the container by the surgeon or the nurse. It is
at this point that human error could cause
specimen loss.

We could not find any publications that directly
address this specific issue, although there are articles
discussing personal and organizational errors that
address the problems of human error.2,3

The main method of reducing errors is to create the
ideal organizational system with precise written
procedures that will enable individuals to perform
their professional tasks optimally.

In addition, encouraging the reporting of errors,
or of near errors, will help identify core problems.
Once these are identified, the organization can an-
alyze the causes and come up with a more detailed
procedure for averting such errors. This mode of
action creates a method of controlling the proce-
dures, along with a measure of flexibility to recog-
nize and correct errors.

To overcome the problem, we recommend two
modes of action. The first is to insert the specimen
into the container immediately after excision, and
the second is to request that the nurse and physician
sign their names on the container at the end of the
procedure to confirm that the specimen is in the
correct labeled container.

In summary, in this prospective study, we found that
the incidence of pathological biopsy specimen loss
in the outpatient community in our series was 1 out of 1,466 (0.068%). We presume that the main cause (66.6%) was human error, resulting in noninsertion of the pathology specimen into the pathology container by the surgeon or the nurse. Another cause was loss of the specimen during laboratory processing.

We recommend that surgeons be meticulous about inserting specimens into correctly labeled containers immediately after excision.

References


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COMMENTARY

The Loss of Pathologic Specimens: Additional Lessons

Allan S. Wirtzer, MD*

Allan S. Wirtzer, MD, has indicated no significant interest with commercial supporters.

In the everyday practice of dermatology, there are many cracks through which optimal care of our patients may fall. Errors by all levels of staff members, as well as professional staff, are possible and include such things as poor recall systems for patients with abnormal laboratory tests and histories of skin cancer. The rate of errors can be reduced through the use of effective systems whose purpose is to identify and correct errors and oversights. The article by Sandbank and colleagues1 indicates one area in which problems have been encountered, that is, the loss of tissue specimens, and how practical thinking can devise remedies for this problem. Because the study was performed in 2001 to 2005, it would have been instructive to produce follow-up information as to how the new policy altered the rates of lost specimens, but even without this information, the article serves to remind readers of the importance of being cognizant of the ways they can continually assess and hopefully improve the performance of daily tasks in the office setting.

References


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