

Left behind radiological investigations: An inherent problem

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Abstract

Objectives: To assess the number of investigations left behind by patients in radiology department, their cost, and the possible methods of reducing the problem. **Materials and Methods:** A total of 1424 radiographs, 160 computed tomography (CT) scans, 300 ultrasonography (USG) reports, and 46 Doppler reports were left behind by patients in one financial year. The total cost of these left behind investigations was calculated and the reports were categorized into normal and abnormal for each modality. **Results:** Of the radiographs left behind 658 were abnormal, with 211 among these being radiographs of postoperative patients. Thirty-seven percent of CT scans had positive findings. Sixty-eight percent of USG reports had positive findings while 46% of Doppler reports were abnormal. **Conclusion:** We believe that the cost and number of these left behind investigations over a period of time would definitely be significant for the health care system in a developing country. It is time to think of the possible reasons and methods for containing this problem.

Key words: Cost; left behind investigations; postoperative; radiographs

Introduction

The number of radiological investigations done in hospitals is increasing. Many of these investigations are not collected by patients. The cost involved in these investigations, the implications of these left behind investigations on further patient management and the possible methods of cutting cost are issues that everyone involved in patient care has to look into.

Materials and Methods

This study was conducted in a 350 bedded hospital attached to a Medical College. The radiology department is well equipped with all modalities. The department also has a Picture Archiving and Communication Systems (PACS)

in place. The films are issued to the patients and thermal paper print outs are given for ultrasonography (USG) and color Doppler examinations.

The number of investigations that had been paid for, reported, and left behind by the patients in the department for the financial year April 2009–March 2010 was retrospectively assessed. The investigations included conventional radiographs, computed radiographs, contrast procedures, USGs, color Dopplers, and CT scans. Magnetic resonance imaging (MRI) was excluded as the unit was installed recently. Medicolegal cases were excluded.

All these investigations were fully paid for by the patients and had been reported by the radiologists. The investigations were categorized into normal and abnormal in different modalities and percentages were calculated for each. The cost to the patients for these investigations was also calculated.

Results

Conventional and computed radiographs

Of the 25,702 radiographs done, 1424 were left behind (5.50%). Of the 1424 radiographs, 658 had positive findings (46.20%) and 766 were normal (53.80%).

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The radiographs from the orthopedic department were the highest among the abnormal radiographs accounting for 510 of 658 (77.50%). Postoperative radiographs accounted for 211 cases of these 510 radiographs (41.30%).

Computed tomography scan

Of the 6762 CT scans done, 160 were left behind (2.36%). Sixty of these 160 CT scans had positive findings (37.50%). Of the 160 CT scans, 124 were brain studies (77.50%).

Ultrasonography

Of the 12,883 ultrasounds performed, 300 USG reports (2.32%) were left behind. Of these 300 ultrasounds, 205 had abnormal findings (68.30%). One hundred and forty-seven of these 300 cases (49%) were from the accident and emergency department, 81 of these 147 were normal (55%).

Color doppler

A total of 1948 Doppler examinations were performed and 46 left behind (2.36%). Twenty-seven of these were abnormal (37.50%).

The total cost of these investigations worked out to 12,17,595 Indian rupees.

Discussion

The left behind investigations problem is not unique to this hospital and when probably looked into other radiology departments across the country might be a larger problem than anticipated. The cost of left behind investigations over a period of time will definitely be huge and significant with the cost being borne entirely by the patients.

A study of this type has not been documented in the literature. A study done in Turkey General Hospital in 2006 has limited itself to left behind CT and MRI investigations.^[1]

There was no particular trend or a particular time of the year where there was an increase in the left behind investigations.

There are many problems faced both by the patients and physicians due to investigations being left behind. It is difficult for the physician to recollect prior investigations and reports. The orthopedic surgeon has to look into the prior radiographs to assess progress.

The patients who do not collect their reports and are transferred to other hospitals for further management have to undergo the same investigations again. Patients who go to a different physician for follow-up again have to undergo fresh investigations, which are a waste of time and money.

The left behind investigations definitely poses a problem for the radiology departments in the form of storage. Space is a constraint and over a period of time storing

such investigations will be a problem. A few patients come to collect their investigations after a few months and the radiology personnel have to waste time and energy searching for these.

One of the possible reasons for investigations being left behind is when the clinician looks at the images on the PACS and does not need the hardcopy. Retrieving images and reports from PACS is an option that a few hospitals have. Delay in printing and reporting of films in the department could also be another reason for patients walking away without the investigations.

Few of the patients directly ask about their test results at the end of imaging study. In a study conducted by Capaccio *et al.*,^[2] about 45% of patients wanted to know the test results at the end of their investigations. The knowledge of the results (presumably normal) could also be one of the reasons why investigations are left behind.

It is time that the hospital administrators and the radiology department formulate a strategy to minimize the problem.

There are a number of ways in which this problem can be dealt with and patient education is one of the first. It is probably the collective responsibility of the physician and the radiology department to educate the patient about the importance of prior investigations and the hazards of radiation. The hospitals can proactively call up the patients to collect their investigations, which may also be a good public relations exercise. Alternatively these investigations can be mailed across to the patients at an extra cost. The hospitals with PACS can print films only on request at an extra cost, thereby saving money both for the patient and the hospital.

Printing of films on plain paper using high resolution laser printers is an option for nontrauma and preoperative cases. This reduces film cost and requires less space for storage.^[3]

Attempts to implement a few of these measures would help in reducing costs and delivering better patient care.

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