

Increasing Medical Student Exposure to IR through Integration of IR into the Gross Anatomy Course

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ABSTRACT

Purpose: To compare medical student knowledge of and interest in interventional radiology (IR) before and after the integration of an IR lecture series within the gross anatomy course.

Materials and Methods: Four elective IR lectures were scheduled to coincide with the relevant anatomy dissection curriculum. Anonymous surveys were distributed to 146 students before and after the lectures regarding students' knowledge of and interest in IR, responsibilities of an IR physician, and IR training pathways. Those who did not attend served as controls.

Results: Response rates were 67% (n = 98) in the prelecture group, 55% (n = 22) in the group who attended the lecture, and 28% (n = 30) in the control group. A total of 73% of the prelecture group reported little knowledge of IR compared with other specialties. This decreased to 27% in those who attended the lecture ($P < .001$). A total of 32% of those who attended believed they had more knowledge of IR than any other specialty, compared with 7% of controls (P value not significant) and 2% of the prelecture group ($P < .001$). Those in attendance could name a significantly greater number of IR procedures (mean, 1.82) than the prelecture group (mean, 0.57; $P < .001$). A total of 64% of those who attended would consider a career in IR, compared with 24% in the prelecture group and 33% in the control group ($P < .05$). A total of 68% of those who attended had knowledge of the IR residency, compared with 5% in the prelecture group and 33% in the control group ($P < .05$).

Conclusions: Integration of IR education into the gross anatomy course proved to be a highly effective way of teaching preclinical students about IR and generating interest in the field.

ABBREVIATIONS

DR = diagnostic radiology

The integrated interventional radiology (IR) and diagnostic radiology (DR) residency received Accreditation Council for Graduate Medical Education (ACGME) approval in September 2014 and participated in its first large-scale match in the 2016–2017 match cycle. The new residency curriculum recognizes IR as an independent specialty and devotes more time to the acquisition of procedural and

patient management skills, but requires trainees who choose to specialize in IR to commit to the field during their fourth year of medical school, whereas this decision previously had been delayed until the third year of radiology residency.

To adequately prepare students for such a decision and increase student interest in the field, the implementation of the new residency should be paralleled by an increase in

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IR-related medical student education. However, IR has yet to establish a formal role in most medical school curricula (1). This is especially true of the preclinical years, in which early exposure to IR is minimal or absent at many institutions. This lack of exposure is highlighted by multiple studies performed at US institutions reporting a lack of knowledge regarding the specialty of IR and its training pathways among preclinical students (1–4).

Early exposure to IR will aid in student recruitment and help secure the specialty's growth, as well as provide students with adequate time to engage in research, find a mentor, and prepare a strong integrated IR/DR residency application (2,5). IR education is also important for students specializing in other fields, as these future referring physicians should be made aware of the diverse utility of IR and the ways in which it may play a role in their future practice (5).

When surveyed, most medical students agree that preclinical lectures would be an effective means of increasing early exposure to IR (1,6,7). Although integration into the established preclinical curriculum can prove difficult, radiology educators have found success with individual lectures and longitudinal lecture series (2,6–8). Additionally, many have recommended integration into the preclinical curriculum through participation in the first-year gross anatomy course (7,9–11). To increase the preclinical exposure to IR at the authors' institution, an elective IR lecture series was implemented with lecture topics correlating with the dissections being performed in the first-year gross anatomy course. The purpose of the present study is to compare knowledge of and interest in IR among students before and after participation in the lecture series.

MATERIALS AND METHODS

Institutional review board approval was attained for this survey study. The IR lecture series consisted of 4 elective lectures scheduled to coincide with the relevant anatomy dissection curriculum. At the authors' institution, the gross anatomy course begins 1 month into the first year of medical school and continues for 3 months. These 3 months are divided into 1-month sections: “thorax, abdomen, and

pelvis,” “head and neck,” and “upper and lower extremities” (Fig 1). Three of 4 lectures were given by attending interventional radiologists. Two third-year medical students pursuing careers in IR gave the remaining lecture. In addition, first-year students have 2 required general radiology lectures during the anatomy course. These are given by an interventional radiologist and include some IR-related material.

Anonymous Web-based surveys were sent to all 146 first-year students participating in the gross anatomy course before and after the elective IR lecture series. Surveys consisted of polychotomous and dichotomous multiple-choice questions and free comments regarding student knowledge of and interest in IR. Survey responses were split into 3 groups: prelecture survey responses, postlecture survey responses of students who attended lectures, and postlecture survey responses of those who did not attend any lectures. The latter group served as a control group. Prelecture surveys were completed within the first 4 weeks of medical school, before the beginning of the gross anatomy course and elective IR lecture series. Survey responses were analyzed for trends and compared by analysis of variance, Kruskal–Wallis test, χ^2 test, and Fisher exact test as appropriate. Statistical analysis was performed by using STATA software (version 5.0; StataCorp, College Station, Texas).

RESULTS

Ninety-eight of 146 students completed the prelecture survey (67% response rate). The elective IR lectures were attended by between 7 and 40 students (mean, 22; median, 21). The postlecture survey was completed by 22 of 40 students who attended at least 1 lecture (55% response rate) and 30 of 106 students who did not attend any lectures (28% response rate). Of those responding who attended lectures, 11 students attended 1 lecture (50%), 8 students attended 2 lectures (36%), and 3 students attended 3 lectures (14%).

Students were questioned regarding their knowledge of IR compared with their knowledge of other specialties

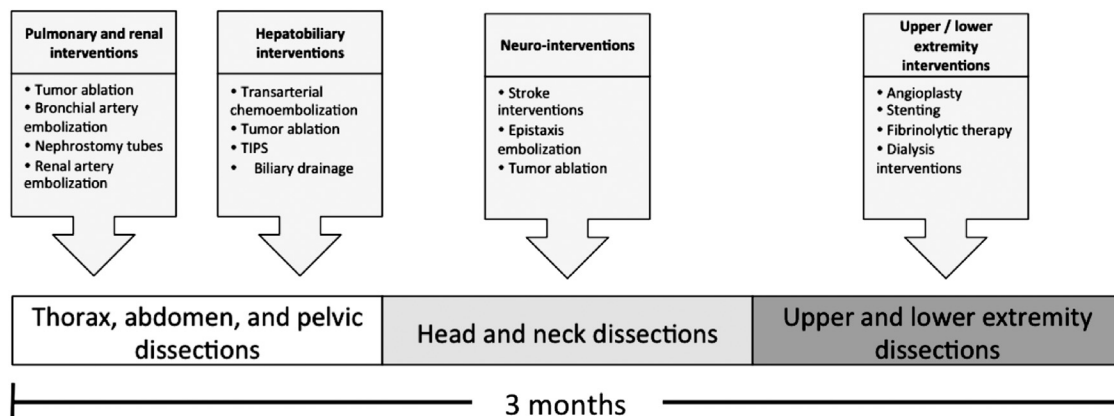


Figure 1. Gross anatomy course schedule and corresponding IR lecture topics (TIPS = transjugular intrahepatic portosystemic shunt).

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