Periadventitial Adipose Tissue (Tunica Adiposa): Enemy or Friend Around?

To the Editor.—Recently, studies on the periadventitial adipose tissue (PAAT), a subfield of adipobiology, have attracted the attention of scientists because PAAT may indeed be a path to atherosclerosis. In a recent issue of *Archives of Pathology & Laboratory Medicine*, Deborah Vela and colleagues presented a review on the role of PAAT in atherosclerosis.

In the accompanying editorial, Telldes highlighted the atherogenic potential of PAAT, discussing epicardial adipose tissue–associated, atherosclerosis-prone versus myocardium-associated, atherosclerosis-resistant segments of coronary arteries. Accordingly, he cited Scher’s article (Telldes’ reference 4), while failing, as did Vela et al, to mention the respective response to it, showing that PAAT is ‘‘another neglected phenomenon’’ in coronary atherosclerosis. Probably, a ‘‘space limitation’’ has not allowed Vela et al to cite many seminal papers in the field reviewed recently by our group.

In our eyes, the article by Vela et al and the editorial by Telldes raise the important question of whether PAAT is an extravascular or, in nature, an “intravascular” compartment. Today’s paradigm holds that the vascular wall consists of 3 layers: the tunica intima, media, and adventitia. We suggest that PAAT may indeed be considered the fourth, outermost vascular layer, that is, *tunica adiposa*. Because (1) there is a lack of any fascia-like structure between the adventitia and the PAAT; (2) PAAT is a producer of a large number of bioactive molecules such as adipokines, which, in a paracrine way, may exert proinflammatory and smooth muscle cell growth/migration promoting, in fact, atherogenic effects; and (3) PAAT releases vasorelaxing factor(s), which may benefit the vascular biology, hence, a question whether PAAT is an enemy or a friend of the artery may emerge. Accordingly, new experiments, for example, PAAT-depleted mice and adipose-derived relaxing factor–deficient mice, as well as studies on animals and humans affected by cardiometabolic diseases such as atherosclerosis, hypertension, obesity, diabetes, and metabolic syndrome, should be developed in perivascular, “vasocrine” adipobiology. Briefly, the more we learn about PAAT (tunica adiposa), the more we may know about vascular and metabolic health and disease, including the role of an adipose dysfunction in cardiometabolic disease. Further studies should deal with both endothelial and adipose dysfunction in the field.

In Reply.—In our manuscript, we critically reviewed the topics of vascular injury, atherosclerosis, and potential diagnostic and therapeutic implications of periadventitial fat and added some original work that suggests that periadventitial fat inflammation is not only associated with the presence but also with the phenotype (high risk vs low risk) of the underlying atherosclerotic plaque. Although 75 references were included, some relevant work was not listed, including contributions made and reviewed by Dr Chaldakov’s group. We believe that research in this field will lead to clinically relevant diagnostic and therapeutic advances.

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We would like to acknowledge the comments of Dr Chaldakov et al regarding our review article on aspects of periadventitial adipose tissue as well as the discussion of the innovative publications of Dr Chaldakov and colleagues. We definitively agree with the statement that the periadventitial adipose tissue “is another neglected phenomenon in coronary atherosclerosis.” This is even more puzzling considering that the field of adipose tissue, partially driven by the epidemics of obesity and diabetes in the United States, is actually advancing at good pace.

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GEORGE N. CHALDAKOV, MD, PhD
ANTON B. TONCHEV, MD, PhD
DIVISION OF CELL BIOLOGY
IVAN S. STANKULOV, MD
DEPARTMENT OF FORENSIC MEDICINE
PETER I. GHENEV, MD, PhD
DEPARTMENT OF GENERAL AND CLINICAL PATHOLOGY
Varna, Bulgaria 9002
MARCO FIORE, PhD
LUIGI ALOE, PhD
INSTITUTE OF NEUROBIOLOGY AND MOLECULAR MEDICINE
NATIONAL RESEARCH COUNCIL—EUROPEAN BRAIN RESEARCH INSTITUTE RITA LEVI-MONTALCINI
ROME, ITALY 00185
GORANA RANCIĆ, MD, PhD
DEPARTMENT OF EMBRYOLOGY AND HISTOLOGY
MEDICAL FACULTY
Niš, Serbia
PLAMEN PANAYOTOV, MD
DEPARTMENT OF CARDIOVASCULAR SURGERY
DIMITAR D. KOSTOV, MD
DEPARTMENT OF INTERNAL MEDICINE
UNIVERSITY HOSPITAL ST MARINA
VARNA, BULGARIA 9002

GEORGE N. CHALDAKOV, MD, PhD
ANTON B. TONCHEV, MD, PhD
DIVISION OF CELL BIOLOGY
IVAN S. STANKULOV, MD
DEPARTMENT OF FORENSIC MEDICINE
PETER I. GHENEV, MD, PhD
DEPARTMENT OF GENERAL AND CLINICAL PATHOLOGY
Varna, Bulgaria 9002
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LUIGI ALOE, PhD
INSTITUTE OF NEUROBIOLOGY AND MOLECULAR MEDICINE
NATIONAL RESEARCH COUNCIL—EUROPEAN BRAIN RESEARCH INSTITUTE RITA LEVI-MONTALCINI
ROME, ITALY 00185
GORANA RANCIĆ, MD, PhD
DEPARTMENT OF EMBRYOLOGY AND HISTOLOGY
MEDICAL FACULTY
Niš, Serbia
PLAMEN PANAYOTOV, MD
DEPARTMENT OF CARDIOVASCULAR SURGERY
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UNIVERSITY HOSPITAL ST MARINA
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DEBORAH VELA, MD
CARDIOVASCULAR PATHOLOGY
RESEARCH DEPARTMENT
TEXAS HEART INSTITUTE
HOUSTON, TX 77030
Adequacy of Pathology Resident Training for Employment: A Survey Report From the Future of Pathology Task Group

To the Editor—I read with interest the article in the April 2007 Archives of Pathology & Laboratory Medicine concerning the adequacy of pathology residency training.1

It seems to me that if this article was included in the May 2007 Continuing Medical Education “Test Your Memory” Program offered by the College of American Pathologists, then it was an important article to read and to study.

What appears to me is that pathology programs are not being very effective if they produce some 31% of graduates with at least one major deficiency and if some 61% of personnel need guidance. Another glaring deficiency was that some 48% of graduates were deficient in “laboratory management/laboratory medicine.” Given these statistics, then, I think that there is a need for the data to be presented to the American Medical Association Graduate Council on Medical Education and that programs involved with these “deficient graduates” need to be closed. They are producing a “deficient product.” If you tout that the College of American Pathologists is “committed to excellence,” then unfortunately the training programs do not share that commitment. We want quality not quantity in graduate education.

If it is a “politics thing” and some programs have a few “prima donnas,” while having inadequacy in the rest of the department, then they should not be involved with training people. The trainees will not receive an adequate education. It is not fair to the trainees. There should be stricter requirements for keeping programs open. The American Medical Association Graduate Council on Medical Education should have stricter surveys of programs and inspections of programs. They should probably close at least one third to one half (33%–50%) of these outfits, especially the so-called combined anatomic pathology–clinical pathology programs that may well be deficient in laboratory medicine.

What is also apparent to me is that the pathology groups who are hiring people also do not share a commitment to excellence. It leads me to believe that many groups thought they would “hire on the cheap.” They would hire a “defective graduate” because it might be cheaper to hire that individual rather than an experienced pathologist. They forgot the old adage by Diamond Jim Brady: “to make money . . . you have to spend money” or its corollary, “you get what you pay for.” Unfortunately, the groups may have saved a few dollars by hiring a graduate with deficiencies, but it will come back to haunt them with litigation and liability risk by those graduates, some 61% of whom need guidance. You cannot watch personnel all the time. Unfortunately, mistakes—which shall lead to litigation/medical malpractice with time—will eventually come back to haunt the group and leave some of them “penniless” in certain instances.

I think that training programs need more rigorous requirements. They need more inspections and surveys to maintain adequacy—especially in “clinical pathology” or laboratory management/laboratory medicine (48% inadequacy in graduates).

If some 33% to 50% of programs have to be closed, then so be it.

We want quality in training, not quantity.

Let us see a commitment to excellence in training as well as in the practice of pathology.

Groups should also be advised that hiring on the cheap is not recommended in the long run. The overall cost of guidance of these types of graduates and, in some cases, liability/malpractice far outweighs the savings versus the cost of an experienced pathologist. Do not be penny wise and dollar foolish in hiring. You may live to regret hiring such a graduate.

ARTHUR R. COPELAND,
MD, PhD, FCAP
Medicolegal Consulting
Houston, TX 77054

In Reply.—We are in receipt of the letter from Dr Copeland regarding the effectiveness (or not) of pathology residency training programs. He offers several suggestions, including closure of one third to one half of combined anatomic pathology–clinical pathology (AP-CP) training programs that are deficient in “laboratory management/laboratory medicine” and hiring of more experienced pathologists by practice groups that are otherwise hiring “on the cheap.” These rather drastic suggestions are given to ensure that (1) the remaining pathology residency program graduates are free of such deficiencies; and (2) the practice marketplace is appropriately staffed with competent pathologists.

We take a somewhat less pessimistic view of the graduating classes of pathology residency training programs. First, identification of apparent deficiencies in graduates does not mean that they are incapable of practicing medicine as American Board of Pathology–certified pathologists. If anything, the first set of postgraduate tasks in what might be termed lifelong learning are clearly delineated. Grant-
ed, inadequate training in laboratory medicine/laboratory management may indeed qualify as a “major deficiency,” as stated by Dr Copeland. We concur that obtaining more uniform excellence in training in laboratory medicine is a worthy goal and note that the parent organization for this journal is taking a leadership role. Programming of the College of American Pathologists (CAP) includes the Virtual Management College, a complete set of practice management courses, and the CAP Residents Forum. All of these are benefits of membership, and the CAP offers free memberships to pathology residents. Moreover, the academic sector from which such pathology graduates emer- nates has not been idle on the need to enhance training in labora- tory medicine—witness leading publications on this topic since acceptance of our manuscript by the ARCHIVES.1–3

Dr Copeland makes the assumption that senior pathologists are readily available in the marketplace. This may not be true. On the one hand, experienced pathologists may not be “moveable,” either in the academic marketplace or in the private sector. On the other hand, and despite dire predictions to the contrary, our data suggest that there is indeed need in the marketplace. Bruce Alexander4 documents that the American Board of Pathology issued 608 certificates in 2005, of which 421 were combined AP-CP, 133 were AP, 35 were CP, and 19 were primary-plus-subspecialty certificates. However, the comprehensive 2006 Resident Survey conducted by the Residents Forum of the Amer- ican Society of Clinical Pathology5 indicates that only 462 pathology resi- dents from American training programs were entering the marketplace. This matches well with the estimated 460 positions offered by the marketplace, as documented in our study.6 Furthermore, this is strikingly close to the 481 matriculants entering American pathology residency training programs (Accreditation Council for Graduate Medical Education data). Considering that 80% of recent pathology graduates were offered their job of choice in the academic market-place, and 61% obtained their job of choice in the private sector,7 we conclude that the specialty of pathology may indeed be a “buyers’ market-place” at the current time. We do note that 34% of the reported 6129 practicing anatomic pathologists and clinical pathologists are international medical graduates, as are 43% of cur- rent trainees.8 It is obvious that we are already not producing enough pathologists from American medical schools to meet our country’s needs; closing existing training programs would only further exacerbate the shortage of pathologists from these schools.

Lastly, we consider dismantling of AP-CP programs to be counterpro- ductive. Our survey gives no indication that the marketplace for hiring recent pathology graduates seeks single-board pathologists over AP-CP graduates. Rather, the ability of graduates to successfully handle the dem-ands of both the anatomic pathology and laboratory medicine service sectors seems to be highly desired. Hence, we strongly advocate the strengthening of existing training programs.

The purpose of our report was to doc-ument the perceptions of both employers and recent pathology resi- dency graduates regarding the ade- quacy of training. This was not an in- strument to either pass judgment on the seriousness of perceived deficien- cies, nor to make recommendations on how deficiencies might be correct- ed—in the overall administration of graduate medical education or in management of individual programs per se. The jurisdiction for these is- sues falls to the several agencies re- sponsible for the oversight of gradu- ate medical education. In the case of laboratory inspection and accredita- tion programs, we must be clear that such programs inspect the perform- ance of a licensed laboratory, not the competencies of individual practi- tioners. The certification of competen- cy of individual practitioners falls to professional bodies such as the American Board of Pathology.

For our part, the responsibility for the success of our profession falls to all of us: recruitment of outstanding medical students from a diverse spectrum of our society to the spe- cialty of pathology; high-quality pa- thology residency training across the encyclopedic nature of our specialty; and positioning our graduates to lead our specialty into the future. In the last instance, the future of our spe- cialty depends upon our graduates being able to be proactive in anticipating rapid evolution in the role of pathologists in patient care, and uti- lizing both emerging technologies and emerging practice models to the maximum benefit of the patients we serve.

We are optimistic that our specialty will make important adaptations and improvements in pathology residen- cy training. We hope that our pub- lished study will provide specific guidance for so doing. We thank Dr Copeland for contributing to what is sure to be a lively follow-on discus- sion.

MARY E. KASS, MD
College of American Pathologists
Northfield, IL 60093

JAMES M. CRAWFORD,
MD, PhD
Department of Pathology
University of Florida
Gainesville, FL 32610


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