


Discussion

Dr. Thomas R. Gadacz (Augusta, Georgia): Dr. Wells, Dr. Copeland, Members, and Guests. First, I wish to thank the authors for the opportunity to review the manuscript and commend them on a very remarkable series of patients that required not only some difficult preoperative planning but also significant intraoperative judgment.

This remarkable series of 36 patients with mucinous cystadenoma really demonstrate that good results can be achieved with enucleation. I’d like to ask five questions.

Although the fistula rate was 50% in the 10 patients that had enucleation, this did not seem to result in any mortality or, for that matter, significant morbidity. Was there any correlation between the location of the lesion and the incidence of the fistula? That is, were most of the fistulas in the patients who had a cystadenoma in the head of the pancreas? Second, did any of the patients with enucleation require reoperation for any reason? Although you didn’t state that in your manuscript, were there any other problems, particularly with the fistulas?

Third, although you stated that none of the patients that had enucleations turned out to have a cystadenocarcinoma on the final pathology, I think your comment about being somewhat lucky in this regard was very appropriate. In the event that a patient did have enucleation, say, in the body and you found this out then on permanent section, what would your strategy be in such a patient?

To decrease the incidence of pancreatic fistula, in your manuscript, you mentioned the use of a Roux-en-y applied to the enucleated bed. In what cases would you recommend the use of the roux-en-y?

I wish to thank the Association for the opportunity to comment on this paper. [Applause]

Dr. R. Scott Jones (Charlottesville, Virginia): Thank you, Dr. Wells, Dr. Copeland.

I wanted to compliment the authors of this study and make a couple of comments. The first is to remind everyone that mucinous cystadenoma of the pancreas is a rare disease, and I would like to point out that in a period of 6.5 years, they accumulated experience of 28 cases total, I believe. And that’s a fairly remarkable experience.

Ten of those patients had enucleation. And what this experience does for us is to delineate the variables that we have to consider when making a decision how to treat the lesion. If I could just summarize, it seems to me the things that are important here are the location of the lesion, the size of the lesion, and the surgeon’s confidence about whether this is a benign or malignant lesion.

And, very clearly, the ante is fairly high in lesions in the uncinate process in the head of the pancreas, because to resect that is a fairly substantial operation. If you can obtain equally good long-term follow-up with local excision or enucleation, that clearly would be preferable.

Likewise, in the tail of the pancreas, if a lesion can be removed by enucleation and spare the spleen, that, likewise, is an asset. And as we are making this decision, the thing that will linger in our mind about this, and the real tension, will be is this a benign or malignant lesion. And, clearly, if you knew that it was malignant, you would probably prefer to have a margin around the lesion to have the best chance to cure.

Well, we can continue to look at the data here because, in their case, in this series of 10 patients enucleated, they were right every time, and they have had no recurrences, actually, in either group. So I think that the follow-up data that they provided with this excellent study also gives information that will help the surgeon to decide intraoperatively what to do about this.

So I simply want to say that this was an extremely well-written paper, thoughtfully discussed, and I think it is a real bit of new knowledge and insight that will help us to manage patients like this in the future.

Thank you very much. [Applause]

Dr. James V. Sitzmann (Washington, D.C.): Thank you, Dr. Wells, Dr. Copeland. I rise to add to the compliments to Dr. Cameron’s outstanding pancreas group at Hopkins and to Henry and to Mark and their good work here. It is a stimulating and a challenging set of patients, and I will admit that it is a somewhat controversial series for me. It may be indicative of an example of activities like tightrope walking. It’s an example of something that can be done but not necessarily should be done. And so I would rise to raise a couple of questions about the lesion size and the determination by the surgeon to do either resection or enucleation.

In the manuscript that you so kindly provided, you noted there was a difference in the resected ones — about 3.6 cm was the average size, and the enucleated ones were 2.8 cm. Is that to imply that there should be a distinction based on the surgeon at the time
of operation, that smaller lesions are more accessible for enucleation and larger lesions should go to resection?

And the issue of determination of whether this is a malignancy or not at operation, I think, will be a confounding factor for many surgeons who aren't blessed with the enormous experience of the Hopkins group. If that cyst is ruptured during the case and it comes back malignant, what is the surgeon's option?

If the frozen section analysis, which, of course, is going to be incomplete at the time of operation, gets changed postoperatively, what is the import and the impact of that?

And then, lastly, is there a role for ERCP preoperatively in determining whether these lesions are involving the duct directly or not, and would that help you predict the risk of postoperative fistula formation?

And is there a role for tumor markers preoperatively? I think, in conclusion, the data shows that if you have outstanding surgeons, they get outstanding results, and these patients benefited from their outstanding surgeons. I think the best thing to speak for the enucleation technique is that it does minimize the long-term risk of diabetes which, in some patients, is a significant consideration.

Again, thank you for allowing me the privilege of the floor. [Applause]

DR. LARRY C. CAREY (Tampa, Florida): Thank you, Dr. Wells, Dr. Copeland, Members, and Guests.

I, too, am on Dr. Pitt's paper route and enjoyed having an opportunity to read this manuscript during the course of this meeting, and I have a couple of questions.

Henry, obviously, your missionary zeal at convincing your colleagues at Hopkins that enucleation is the way to go with these tumors hasn't really been totally successful. But I tell you, you are doing a pretty good job of convincing me, so keep at it.

Did you know all these tumors were mucinous tumors beforehand? And if you did, how did you know? Because there now has emerged an algorithm of sort of helping one select mucinous tumors from the other kinds of cystic lesions, and I think that's important.

While it is not really the focus of your paper to talk about the diagnosis, I think that would be of interest, at least to me.

Do you have any tricks for avoiding injuring the pancreatic duct? Do you use ultrasound or do you cannulate the duct, or is there anything that one can do if you are going to decide to enucleate tumors to help you know that you are not taking a divot out of the pancreatic duct in the course of your enucleation process?

And then, finally, I wasn't quite sure how you decided which ones to enucleate and which ones not, because size is clearly not the criterion, since the tumors that were resected were a little bigger. But if you look at the range, there were tumors under a centimeter that were treated with resection rather than enucleation.

And then, finally, it appears, since the majority of those resected had distal resections and yet the effort to preserve the spleen seemed to be lacking, the great majority of patients had splenectomy even with distal resection.

And I wonder if you can explain whether or not you don't think splenic preservation is, one, possible or, two, important in distal pancreatic resection for nonmalignant disease.

Thank you for the opportunity of reading the paper and discussing it. [Applause]

DR. JOAQUIN S. ALDRETE (Birmingham, Alabama): There was a lot of discussion, but nobody mentioned any cases besides Dr. Pitt.

We looked at our experience in 28 years, and we found only three cystic lesions of the pancreas that we could identify as mucinous producing. One was a very large one, and we did a pancreaticoduodenectomy, and that patient is still alive 16 years later.

There was one small lesion in the center that we couldn't tell what it was, except it was a cystic lesion but, because of the potential malignancy, we removed it with enucleation, and that has worked well.

The last patient that I did, I did a pancreaticoduodenectomy because the pancreatic duct appeared to be obstructed, or dilated at least. And the endoscopy reported finding a large amount of mucous in the ERCP coming out of the pancreatic duct. I did a pancreaticoduodenectomy for that reason, and we have followed that patient. And 2 years later she came back with the remnant of the pancreas, now with pain and with obstruction. The pancreatic duct was much more dilated. We followed it for another 2 or 3 months, and it seems to progress.

And I explored and did another re-resection of the distal pancreas, about another 3 cm or 4 cm, and there was again a recurrence of the mucinous tumor, and in the report, the pathologist thought that it was benign, but there was this extensive infiltration of mucinous.

So maybe this observation is that if one notices a large amount of mucinous during the ERCP, probably this patient should be resected in a more radical way.

And I would like to ask Dr. Pitt if he has seen one of these, if he would think that under those circumstances it might be important to consider resection?

Thank you. [Applause]

DR. MARK A. TALAMINI (Closing Discussion): Dr. Wells, Dr. Copeland, Members, and Guests. I thank the Society for the privilege of closing this discussion. I also thank Dr. Pitt for the privilege of working with him on this project and this group of patients.

Drs. Gadacz, Sitzmann, Carey, Aldrete, I thank you for your insightful comments and questions and Dr. Jones for your generous support. The questions fell into a number of groups, and I will do my best to answer them in the aggregate.

A number of questions addressed the criteria for enucleation of these lesions. The preoperative criteria included a benign appearance on CT-scan, such things as a thin wall and lack of any local invasion or vascular invasion and no preoperative jaundice. In the operating room at laparotomy, there could be no adjacent organ involvement and complete exposure of the region of the pancreas involved was necessary.

In all of these patients, as Dr. Pitt mentioned, both frozen section and final pathology were negative, and there were no reoperations on that basis. Had the pathology, indeed, revealed carcinoma, we would have then proceeded with a resection, either at the time of the operation or in the early postoperative period. We are fortunate to be blessed with a group of skilled pathologists who are experienced in the reading of these difficult lesions.

A number of questions also addressed the issue of fistulas, perhaps the Achilles heel, if you will, of this particular series. Only three patients had preoperative ERCP's, and in none of those patients was a direct connection to the lesion demonstrated. However, based upon this series and this experience, we think that
preoperative ERCP in this group of patients, when enucleation is being considered, makes good sense. The fistulas were, in fact, both in the head and in the body of the pancreas. And based upon the small numbers in this series, no significant conclusions could really be drawn regarding the site.

Also, based upon this series and the incidence of fistulas, we think that the routine use of Octreotide in the early postoperative period also makes sense. Our bias would be not to use roux-en-y drainage in the majority of these patients because most of the pancreas tissue is normal, making sewing to the pancreas potentially hazardous. However, in the instance of a fibrotic gland with an obvious fistula, roux-en-y drainage might well indeed make sense.

While these fistulas indeed prolonged the hospital stay, they were all pancreatic fistulas with pure pancreatic juice and were, therefore, easily treated without any further operation. And in this group of patients, we did avoid the resectional morbidity and mortality by doing enucleation, and we also avoided the morbidity of diabetes.

In terms of size, these lesions did tend to be smaller and I believe that’s because, as the series began, we approached smaller lesions earlier. However, the size difference was not significant. In terms of tumor markers, probably later in the series with more widespread use of tumor markers, we have looked at these, but we do not have any data to draw any conclusions.

I think the differences regarding splenectomy and, in fact, regarding enucleation between the resection group and the group presented here largely reflects differences in bias among surgeons in the group at Johns Hopkins.

Dr. Aldrete, we thank you for your support and your mentioning the enucleation patient that you reported. We feel that in patients with mucinous papillary type of lesions such as you seem to be describing, that resection probably would be in order rather than enucleation.

I’d like to thank the Society for the privilege of the floor. [Applause]