Supplementary Online Content


eAppendix. Full OR and Coaching Session Dialogue

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eAppendix. Full OR and Coaching Session Dialogue

Example 1:

Resident: I remember at one point you said to…kocherize the duodenum by feel, and I was like, “No idea how to do that.”

Coach: So, one of the things that can help you learn how to do that is: every time you do a case, you have to explore, right?…Just do it, every time you do a case…Do it systematically…You’re just getting used to feeling and not looking, every single case you do…That will give you a good sense for what things feel like. The other thing you can do that is useful to…learn how to feel…is whenever you’re reflecting the peritoneal reflection or…bringing down the splenic flexure, try and do it by feel.

Resident: Without looking, just feel?

Coach: Yeah, try and do it without looking; do it by feel…Move the tissue between your fingers…Pull the colon to the side and feel the tissue you’re going to divide before you see it…Expose it and divide it. And then do it again by feel. You learn the resistance of something… “Oh, I better not pull on that; that’s going to bleed if I do,” versus…what you can do. I think that’s really helpful. Not only is it really helpful, it’s actually a much better way to actually do the real operation. So if you can bring down the splenic flexure safely without having to make the incision all the way up to the xiphoid, that’s obviously better for the patient…

…

Coach: How do you teach somebody to do something totally by feel? There’s no way to – you just have to do it…You just have to practice it… Next time you do a right colectomy…the way you do it is: you make a little score in the peritoneum and…mobilize the right colon by feel.

Resident: Mobilizing the whole right colon?

Coach: Yup, mobilize the right colon by feel. I mean, you’re going to have to divide some structures – you’re going to have to pull the omentum out of there…so you don’t just bleed, but do it by feel…You’ll feel the way to go all the way up that space. And then the next time you need to kocherize the duodenum, same thing…Score the peritoneum and then put your hand behind it, and – do it by feel.

Resident: But you meant, when you told me to do that – did you mean actually dividing everything by hands or just sort of making that plane?

Attending: Make the plane. I mean, you don’t want to rip the peritoneum…Sometimes people’s tissues are so flimsy, you can just peel the peritoneum away. That’s actually pretty uncommon. And you don’t want to just rip things. But often if you just…score it, and then you can just retract it, and you can score the peritoneum as you go, but you’re really doing the dissection.

Example 2:

OR

Coach: Now we got to figure out: where’s the transverse colon going? And where do we take it if we have to?…Take this colon towards you. We can take down this omentum. This will help us define what part of the colon is coming…Try and take that all with your Ligasure. Coming through omentum. Okay, now pull that towards you. And here. And here…All right, so there’s the mass there. So it looks like it’s basically involving the mesocolon here. So, then what do we do more from here?…So what I can’t tell is: is the tail of the pancreas involved? Because I can’t actually see it yet. So this omentum, thismesentery is, so I think what we’re going to have to do is probably take it.

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Coaching Session

Resident: I’m just looking at…taking down the transverse colon. Did we do that just for…retraction at the point?

Coach: Well, we took the transverse colon because this mass was really just deep to the mesocolon…What are your boundaries of the retroperitoneum on the left side? There’s going to be a difference on the left versus the right.

Resident: So, superiorly, the diaphragm. Kidney laterally. Inferiorly, I guess it goes down into the pelvis. And then medially…the aorta.

Coach: Right, so…for a retroperitoneal tumor, it all really depends on where it is in relation to structures that are in the retroperitoneum, like the colon.

Resident: Splenic flexure…

Coach: Exactly, so the way I like to think of it is: if you imagine it as a three dimensional…watermelon shape, and then the anterior surface of your [retro]peritoneum is really your left mesocolon and your colon itself…so therefore if you take the colon and the mesocolon which includes the splenic flexure, then you’ve essentially taken that anterior border of the retroperitoneum. So you have a margin there, even if it’s thin; you have a biologic margin for the retroperitoneum. The other margins…can be more challenging, but this is often the easiest margin to take. In the pelvis…it can…retract in that fat all the way down, and then, as it gets in the pelvis, it’s kind of hard to know where your boundary is. Superiorly, you can get all the way to the diaphragm, but if it doesn’t go that high…? In this case, the spleen, the pancreas – the kidney was obviously going to come out, but the spleen and pancreas can be another issue. And then the other margins – your posterior margin and your lateral margin – are really your flank wall and your back – the deep muscles in the back that face the retroperitoneum. So there you can…take the psoas; you can strip that very flimsy fascia over those muscles to get a margin. But the one really easy margin…the lowest-hanging fruit is taking your mesocolon. So that’s why I just take the colon. I just tell that to every patient: I’m going to take it, for that reason. So that’s why I take the colon, even if it’s not really invaded into it.

Example 3:

Coach: And it turned out to be tumor, which was kind of a shocker, so I’m glad we biopsied it. It completely changed his prognosis, the fact that we biopsied it. It certainly made me very happy we did. Thank God we did an open biopsy instead of trying to do a laparoscopic. Because had we done a laparoscopic…

Resident: We probably wouldn’t have seen either of those things, huh?

Coach: Laparoscopic, we never would have found the separate nodule in the gastrohepatic ligament. It wasn’t on the CT; there’s no way we would have seen it. And we never would have biopsied that mesentery – wouldn’t have been able to discern it, because it was only by feel. Never would have biopsied that mesentry, and it totally changed his prognosis and how we’re going to treat him. So I think a good example of why, sometimes…you have to…be able to feel.

Example 4:

Resident: After his postop course and everything that went on…I…wondered if we did him any favors, you know?…The CT did not suggest that degree of ascites, but I wondered if I knew that going in, I would’ve been like…

Coach: If you knew he was going to be dead within a week of doing surgery? And was never going to actually use the [jejunostomy] tube?…Right, now that’s a very, very good question. Certainly we didn’t achieve our goals.

Resident: And you know what? The surgery was the inflection point down for him.

Coach: Right…Yeah, you really don’t know going into it if this is going to be your terminal event for somebody with widely metastatic cancer who is dying. And it had the potential to benefit him, but it had the potential to kill

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him…I knew he was dying. The question was: was he dying in days or weeks or months? And I felt he had a couple of months…So, I talked about this case with [another surgical attending] before we did it just because it’s…her area of expertise…She said if they think he’s got some time, and if they have a therapy to offer him, then it’s reasonable…If there was no therapy, if he wasn’t getting any chemo, then there was no point, no point. It’s just to keep him alive a little bit longer [until] he dies. But if you think that, “Well, we’re going to offer him something and we’re going to improve his quality of life a little bit…”

Example 5:

Coach: What would you do…if that were the case – large spleen?

Resident: I’d want to theoretically approach it the same way, and go with what’s easy first, and let things kind of develop. And so I think getting into the lesser sac the way we did through the omentum and short gastrics – gastrocolic ligament – the same way. Continue to take down short gastrics, as long as they were visible.

Coach: Sure, and safe.

…

Coach: What if the person had bad portal hypertension? Where would you expect to have possible problems?

Resident: The short gastrics are going to be huge.

Coach: Where else would you expect that you won’t normally expect?

Resident: Sometimes just getting in, you’ll get caput medusa.

Coach: Where else? And the only reason I mention this is I actually had a case I did several years ago…It’s also the same case [we]e got into the adrenal gland, too.

Resident: …I mean, your vessels, the left and right gastric and the complex with the esophagus is going to be very big.

Coach: But that didn’t give us any bleeding problems at all.

Resident: Well…as you’re coming around superiorly, the small venous complex…

Coach: That’s one place, but this is even one other place you wouldn’t…

Resident: Oh, I’m sorry. Taking down the falciform, you have a patent –

Coach: Yeah, you’ll get that, but there’s something even worse than that…It really is worse, because it’s very hard to control.

Resident: Phrenic?

Coach: Nope. The retroperitoneum. We actually had a case where the portal hypertension was so bad that when he went to mobilize it, the retroperitoneal veins were …this big [motions with hands]. And when he lifted it up…— that’s how we got into the adrenal as well – we had such bad retroperitoneal [bleeding]…We couldn’t see where it was coming from…We lost quite a bit of blood …We finally got it out, realized what the problem was, and we had to go around and…literally try to stick-tie everything. But it was all in the retroperitoneum; it wasn’t on the diaphragm, it wasn’t in the bowel mesentery. But it’s just something to just be aware of because that’s some place that nobody ever really thinks of, but that’s one of the collateral pathways, as you know, for portal hypertension.

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Example 6:

Coach: What if you didn’t have a Ligasure?

Resident: Then I would use Kellys and ties.

Coach: Kellys are good, but as you get up closer to the short gastrics, one good thing that we used to learn was: get a really good pair of matched right angles. The tendency is that if you get two right angles, one’s like this and one’s like this [demonstrates with hand motions], and so when you try to do it, you really can’t do it very well. So the learning trick is: you make your opening like this, and it’s one extra step. You go up, you use that as a retractor, you go in with your right angle, you slide that up, and you come back in, and you always do it [in] the direction. That’s what we used to do a lot of before we had the Ligasure, but now the Ligasure makes that a lot less common. But every once in a while, you do it, or you operate at a place that doesn’t have a Ligasure…

Example 7:

Coach: What if you did get into the adrenal gland?

Resident: The adrenal gland…[From an] arterial perspective, they’re all kind of tiny vessels that are going to be difficult to isolate. You could kind of use small measures to coagulate or ligate…but you’re going to be in the parenchyma at that point, and if you can’t get control, you can always isolate the vein, take it, and do an adrenalectomy.

Coach: I don’t know the answer to this, by the way.

Resident: On the left, I’d be worried…You’re in very close proximity to the aorta. You can see if there are any small branches that are causing the ongoing bleeding.

Coach: Now honestly, I don’t know what the right answer is to that. I’ll tell you what we ended up doing with that other case…We held tamponade, like, forever. And then, because exactly like you said, there was really nothing to tie – it was just…a raw surface ooze – …we ended up just…cauterizing everything like a raw surface liver…There was so much retroperitoneal distention that we were afraid if we tried to go in there and remove it, we would make it worse than what we had there. And then we just ended up putting FloSeal, every [pro]coagulant you could think of…

Example 8:

Coach: Just looking at your body positioning.

Resident: I feel like my shoulders are – I feel like I’m a little bit uncomfortable.

Coach: Yeah, you look really hunched over.

Resident: Like I’m stooped, yeah...

Coach: Now see, you’re tying, so you’re standing upright. But when you put your stitch…you get real close…I think it’s a completely natural habit. When you think it’s real important [then] you get real close to it, but I don’t think it helps you any. It probably just gives you a headache.

Resident: That’s what the problem was.

Coach: It is. So…find a way to make yourself comfortable, even if you have to move the table around or move everything including the surgeon.

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Example 9:

Coach: I did promise I would show you that knot. Let’s pause it. I don’t have any suture, so I’m going to use shoelace [demonstrates]. So the one-handed throws: the way I look at it is always the easy one, and then there’s the hard one, which involves slipping the finger around the post. Topologically speaking, the equivalent throw to the hard one is this one, where…instead of the easy one, you curl…So we’ve got the post, and we’ve got the free. You curl the free around the bottom of the hand, bring the post across to make an X, bring it around – that’s the easy one. The equivalent of the hard one with the flippy finger is you bring the free over the top of the hand, make an X, and curl your fingers around…Curl your fingers around…That’s it. So, bring the free around this way, on top, and the post around the bottom, curl your fingers, and then grab the free again between the two middle fingers…And that comes through the hole, and you got your throw.

Resident: All right, let’s do that once more. I usually do the first two that you were doing – everybody does those. The hard one often slips a little bit –

Coach: Or you have to loosen up the post a little bit to get enough freedom to get it around and the knot slips. With the German seamstress knot, you can keep the post fairly rigid and move your left hand around. It’s not so easy with shoelace, is it? Move your left hand around?

Resident: What is that left hand grabbing?...It grabs what’s on your right?

Coach: It grabs the free – it grabs what’s in the left hand again. So the free comes over the middle finger, the post comes over the middle finger, then the middle fingers reach behind and grab the free again.