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SPECIAL TOPIC

The Pregnant Surgeon: What We Are Doing Right

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Surgery is an amazing career, transforming lives with each surgical procedure. Surgical training and practice demands focus, commitment, sleep deprivation, and long workdays. My father, a pediatric cardiothoracic surgeon, gave his life to his patients. Although I was intrigued by a surgical career, I worried that as a woman it would be impossible to balance such a demanding career with having a family.

It is disturbing to hear a woman say this about her own gender. However, I am a realist. Like most surgeons, I have a competitive "Type A" personality and strive for excellence in everything. As a female surgeon, if you decide that you want a partner or children, you must learn to juggle various aspects of your personal and professional life very quickly. It is an exceptional amount of pressure to try to be excellent at all of it.

In the past 2 decades, an increasing number of publications have evaluated the role of family in the surgeons' life.[1–5] In particular, the growing number of female surgeons has increased the focus on pregnancy during surgical training.[6–11] Publications across varied specialties demonstrate that pregnant trainees still fear negative stigmatization and experience untoward comments.[3,6,7] Many document the difficulty of planning, starting, and maintaining a family when one's professional career is arguably at its most demanding.[4,5,11] Most paint a dismal picture of the current workplace and residency policies that serve as obstacles to trainees and their families. In 2018, Rangel et al[6] found that 29.5% of women who had children during general surgery training would discourage female medical students from a surgical career, specifically because of the difficulties of balancing pregnancy and motherhood with training.

When women discourage a younger generation of female surgeons, this speaks volumes to the progress that needs to be made. However, although we should all recognize the difficulties that still exist, we should also celebrate our successes. A generation ago, a woman surgeon was an anomaly. Now, female surgeons are commanding operating rooms across the country. As time has passed, more female surgeons become pregnant. Acknowledging the men and women who have created positive advancements leads to a more balanced and productive exchange regarding future progress. Early articles in our specialty regarding this topic, including those by Mackinnon and Mizgala[4] and Eskenazi and Weston,[5] have suggestions that have been adopted. I benefited from the implementation of those suggestions and believe we should pay it forward. Pregnancy can coexist with surgical training and practice if we acknowledge the continued issues, recognize ways to overcome them, and serve as positive role models for those following in our footsteps.

RECOGNIZING THE ISSUES

If a female surgeon has decided to have a family, arguably one of the paramount issues she faces is the ideal time to become pregnant. Unfortunately, there is not one. During medical school, there is little money and, often, no partner. In early residency, trainees are trying to develop their reputation and do not want to appear "distracted." A research year may be ideal, but only if one can control the whims of reproductive timing. In late residency, the trainee is responsible for junior residents and performing complex surgeries, therefore coverage will be an issue if they miss work unexpectedly. During a fellow year, the insane work hours make it physically challenging. In the first year as an Attending, there is fear regarding what a new chairman, colleagues, or referring physicians may think. Additionally, the female surgeon is now advanced in maternal age and may struggle with fertility issues. So if, and when, a female surgeon decides to become pregnant, there is not a "good" time.

Another obvious issue is that surgery is physically demanding for anyone, let alone while pregnant. A pregnant surgeon will be tired, often alternating between ravenousness and nausea. She may need to use the restroom incessantly and shift her swollen feet. Her obstetric doctor will lecture her about avoiding persistent standing and premature labor. She will be acutely aware of the increased risks for preterm labor, pre-eclampsia, and complications in the surgeon-mother population.[12,13] Perhaps, the most difficult is that her partner will lecture her about protecting their baby.

An additional issue the pregnant surgeon faces is working within demands of training. Every surgeon must complete a

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non-negotiable number of training weeks to graduate.[14–16] All residents must abide by Accreditation Council of Graduate Medical Education (ACGME) policies, regardless of what they have done in their personal lives. I wholeheartedly agree with this policy. Women fought hard to be on equal playing field with men and should be treated equally. However, it is difficult to balance maternal–fetal bonding and physiologic recovery without careful planning of a trainee's leave. It is further difficult if there are no clear leave policies.

In a recent survey of general surgery residency program directors, 67% reported having a formal maternity leave policy and less than half (48%) reported having a paternity leave policy.[3] In a similar survey of plastic surgery program directors, only 37% had a formal maternity/paternity leave policy, of which only 50% of those policies included contingency plans for service coverage should pregnancy complications arise.[11]

Pregnancies rarely go according to plan. Becoming pregnant, and staying pregnant, is nothing short of a miracle. The surgeon may sail through pregnancy or require bedrest. Without policies in place, the mother, the baby, and the colleagues having to pick up the slack may suffer. None of us would enter into a complicated case without adequately preparing. Why would we suggest that for a 40-week marathon? Issues arise oftentimes because people are afraid, uncomfortable, or unwilling to talk and plan for it.

Finally, let us discuss the "elephant in the room." Is it not simpler to hire male surgeons? I would argue that women surgeons are technically superb, exceptionally smart, emotionally intelligent, and phenomenal multitaskers. Data show that they achieve some of the best outcomes in the field.[17–20] We should remember that pregnancy is temporary, occurring during a small fraction of a surgeon's total career. The key is to address the issues, not the gender itself.

CREATING THE SOLUTIONS

A 2014 study found that neither age, sex, nor child-rearing was associated with an increased risk of attrition from a surgery residency.[8] Furthermore, female residents who had children during training were more likely to pursue a fellowship than those who did not (87.5% versus 66.7%, $P < 0.001$). Arguably, if female surgeons can train while meeting personal goals, they can also achieve increasing levels of leadership in subspecialties and academia. As MacKinnon and Mizgala[4] advocated in their 1994 editorial, freeing women to be able to have children while advancing their careers is essential to keep the best and brightest surgeons pushing our specialty forward.

There are a few key ways that pregnancy can be made a nonissue among colleagues. First, there should always be gentle support. Second, a clear and concise leave policy should be applied equally to both genders. Third, pregnancy should no longer be seen as taboo. A few examples from my own experience illustrate what the people surrounding me did right and what I would hope would be emulated for others facing the same situation.

Miscarriage, particularly among physically stressed women, is not uncommon.[12,13] My first pregnancy miscarried and required a dilation and curettage in the same operating room in which I had performed surgery 2 hours earlier. Three days later, I entered that same OR and my attending, noting my anxiety, kindly told me to take a quick break. Fifteen minutes later, regaining my composure, I returned to the case. This gesture was a small kindness, but a real one. Gentle, simple acts of compassion may echo with trainees for years.

My second pregnancy was 2 years later during my fifth year of residency. I told my program director who had previously made it clear that he supported early and open discussion about pregnancy. In his trademark style, he was brutally honest but supportive. He informed me that I had 4 weeks of vacation just like the male residents and that if I needed more time, I would have to make it up to meet the ACGME educational requirements. When I went into preterm labor presenting a Friday morning conference, I convinced myself it was not real. The baby came anyway by way of an emergent cesarian section.

What did my program director do right? He supported me, made the leave policy clear, and kept an open door. We all know the leave policy is not ideal, but until it changes, open discussion of the rules is a must and the only solution. He gave consistent feedback and rearranged my rotations that year to put the busiest ones and necessary call first. My vacation time was shifted. When I went out earlier than expected, backup plans for coverage had already been discussed. As recommended in paper by Eskenazi and Weston,[5] I told my 3 male coresidents early about my pregnancy and expressed gratitude for their flexibility to rearrange schedules. They did not have any surprises and the workload remained evenly distributed. I spent my PTO having a baby and the others broke their ankle or traveled the world.

The 2017 update to the American Board of Surgery's Leave Policy allows residents to "borrow" vacation time from other years and provides an additional 2 weeks of leave, which do not have to be made up, for medical reasons.[15] The American Board of Plastic Surgery also reflects this policy.[16] These small but positive shifts make it possible for pregnant surgeons to graduate on time and should influence a program's leave policies. Rangel et al[6] have put together an excellent table on current maternity leave options.

My third pregnancy is a strong example of dissolution of pregnancy taboo. After finishing my microsurgery fellowship, I was hired at The University of Texas MD Anderson Cancer Center, a large, competitive academic practice. For many reasons, my first son was a miracle and my husband and I were unsure regarding our ability to have another. I blinked and I was pregnant my fourth month as a new attending. Despite being married, gainfully employed, and a mother already, I worried about how my chairman and colleagues would react.

I sheepishly told my chairman. All he said was, "Congratulations! That is fantastic," and he asked me to let him know what, if anything, I needed. He directed me toward the people who would handle my leave arrange-

Table 1. Discussing Maternity or Paternity Leave in a Department

Problem	Advice
Timing of discussion	Program Directors: At residency orientation. Early transparency and discussion avoid multiple issues before they occur. Chairs: At least once with every new hire, including men. Female Surgeons: After 12 wk of pregnancy. Make sure you get to second trimester, as miscarriages are unfortunate but frequent.
Fear of discussion	If you do not discuss it early, it will be harder for everyone to make favorable or fair adjustments. Set it as part of the yearly or bi-yearly department proceedings. It becomes routine and no longer taboo.
Content of discussion	Program Directors: Current ACGME policies and non-negotiable requirements. Evaluate rotation or vacation time adjustments. Discuss graduation in regards to a complicated or noncomplicated pregnancy. Suggest mentors if available. Chairs: Productivity requirements for the year, leave balances, and salary policies. Know the human resources contact that will do the paperwork with the surgeon. Female Surgeons: Timing of your pregnancy and known physiologic hurdles if necessary. Plan for operating in later months and patient/practice coverage.

ments. During my pregnancy, the more senior male faculty would tell me to slow down and to stop eating Oreos. The younger male faculty would tell me stories about their wives' pregnancies.

I operated up to the day before I delivered. When the baby came, everyone congratulated me. Nobody acted as if my pregnancy was taboo. When one of my patients came back with a complication, my peer took her to the operating room. When I called to ask how the takeback was going, my colleague said he was going to hang up on me so I could pay attention to my new baby. This gesture gave me permission to solely focus on my child. I took 11 weeks off, partially unpaid, but that was my choice and worth it. To plan my leave, I met with the Department Administrator and Human Resources early. I made sure I met my call and productivity goals by the time I went out. Those 11 weeks were luxurious compared with residency, except I was also studying for my oral boards. Again, there is never a good time for a surgeon to have a baby.

CULTIVATING A GOOD ATTITUDE AND PRIDE

It is paramount to be honest about the family you are creating. In a recent study of surgeon work–home conflicts and burnout, the authors found that, among married surgeons, nearly twice as many women as men had a spouse/partner working outside the home (83.1% versus 47.8%, $P < 0.001$).[21] Female surgeons were less likely to rely on their spouse/partner to care for a sick child (25.6% versus 70.4%, $P < 0.001$) and were 5 times more likely to employ a nanny (30.5% versus 6.1%). Furthermore, women surgeons were more likely to have experienced a conflict with their spouse's/partner's career (52.6% versus 41.2%, $P < 0.001$) and to have experienced a work–home conflict in the past 3 weeks (62.2% versus 48.5%, $P < 0.001$). Studies by Furnas et al[22] and others have validated these findings within our specialty.[23,24]

Although we are seeing more women surgeons in community and private settings, women are entering the most rigorous academic positions more slowly, largely because the demands of work and home are never going to be easily balanced.[25–27] My husband—who is exceedingly progressive—and I had very open discussions about my career choices and his expectations for me as a wife and a mother. Even so, despite our preparation and a live-in nanny, we still have to work out responsibilities at home. Biologically, there are some things only I can do. Fortunately, my husband is proud of, not threatened by, my career. Like me, he has his own career and still gets up at night to feed the baby. He laughs when I get frustrated because I cannot do "everything." He would never place that burden and guilt on himself, so why should I? Our generation clearly benefits from a slow revolution of perceived gender responsibilities.

I am sure that for some, my attitude toward surgery and motherhood is controversial. I did what *I* needed to do to succeed in the current system. I ultimately chose to work in a large academic practice where I was able to do the complexity of cases I desired. Ironically, despite the rigors to publish and advance, group academia has provided better opportunities for colleagues to cover each other for personal time off. I would absolutely recommend women to seek out the practice forum that complements their professional and personal goals, rather

Table 2. Pregnancy and the OR: Tips to Make it Work

Problem	Advice
Trainee fear of repercussions	Lead by example, if you are most concerned about the patient, everyone else will also model that behavior and ignore your growing bump. Do not leave the case during an important part unless you are actively sick. Be thoughtful about breaks.
Nausea	You must eat and drink before the OR. Stick peppermints or ginger in your scrub pockets. Quietly approach the circulating nurses about the issue. They will usually slip you mints through your mask every hour or so.
Dehydration	It is essential to have at least 20 oz of fluids before a case starts, more if you are late term or it is a longer case. Dehydration leads to preterm labor and kidney stones, you must plan for breaks during longer cases.
Back pain and swelling	Wear a pelvic support band early. It takes pressure off the back and helps with bladder urgency. Sit when you can. Wear compression stockings and support shoes starting the second trimester.

Table 3. Planning for Childcare and Return to Work

Problem	Advice
Type of childcare	Daycare
	Pros—More affordable, early socialization of the child and institution of routine
	Cons—Daycare hours may not be amenable to your work schedule. Backup care is needed if your child gets sick
	Nanny:
	Pros—In-home care of the child, consistent provider. More control of child's schedule and exposure.
	Cons—More expensive. Requires interviews and recommendations.
	Family or spouse:
	Pros—Known providers and family bonding. May be cost-effective if spouse or family member can afford not to work.
	Cons—Do not injure family relationships with unrealistic expectations.
	Hybrid:
	This is the most likely to work. Prepare for plan A and have plan B as a backup if there is an emergency.
Maintaining childcare	Do not argue with your childcare staff unless your child's health or safety is threatened.
	Pay them what their worth, even if it is your entire salary. Do not judge them based on fancy degrees or facilities, but on the happiness of your child.
	Praise your family or partner for everything they do to help. Their sacrifice is allowing your success.
Paying for childcare	Save early and often. Adjust your lifestyle.
	Find out if your work offers any stipends or tax incentives
	Defer loans, if possible, until attending salaries start.
	Put your money into a provider, not a fancy crib or toys. Accept whatever you can find second hand.

than sacrificing one for the other. A paper by Shah et al[28] gives excellent advice on success in different practice models.

Female surgeons, you have an absolute right to create a family and it is no one's business but yours. We should take our call, work our hours, and not complain about pregnancy (at work anyway). We made a choice and many before us did not have one. However, this is not to say there should not be kindnesses shown. Take the free food the nurses give you. Go ahead and steal the juice boxes in the PACU. Put your feet up in the workroom when your pager is not going crazy. Sit in the operating room if possible. Do not lift patients. Do not ask others to do your job. Take care of that baby. Show respect to the women who struggled before you by recognizing the privilege you now have.

GIVING BACK

If women do not have children by a certain time, they may not be able to have them at all. I felt like I had mine "early," but by the time my second child was born I was advanced maternal age. Many of my colleagues and their wives end up in a spiral of fertility problems because all the sudden it is "go" time. The reality is that in today's world, whether you are male or female, if you can do the job of surgery and do it well, you belong.

Be positive about the current surgeon-mother consortium and encourage change by being an example. Give to those who helped you and to those who want to follow you. To thank my colleagues who covered my patients while I was out on maternity leave, I later covered their patients on weekends they were gone. I stayed late and helped them finish tough cases when they were shorthanded. When residents or fellows get pregnant, I quietly coach them through survival: where to find food, where to take a nap, and how to hydrate and urinate on schedule. I refer them to the few articles in the literature about trying to balance everything.[23,26,29–32] The recent multipart *Women in Plastic Surgery* series in this journal has been an excellent expose of different issues facing women and a testimony to progress.

When you see a pregnant surgeon, nod in acknowledgement of the multiple worries that are going through her head. Be open to discuss what went well, where you failed, and what you wish you had known. The best piece of advice I ever received was to learn to outsource what I could and let the guilt go. I have also offered a few helpful suggestions in Tables 1–3. Remember that women can and should be surgeons. Motherhood is not a contraindication!

FINAL THOUGHTS

Whether you are male or female, if your pregnant colleague wants to talk, let her. If she prefers to remain private, that is good too. Show her support to let her see that you do not judge her. And if you are judging, ask yourself why and think before you speak. If pregnancy is not talked about in your department, then talk about it. As in surgery, it is always better to know the anatomy of an issue before it happens. Figure out how you are going to handle maternity leave, or any extended medical leave, and set precedence for behavior. And, if you find yourself pregnant, embrace it.

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