Chapter 13
Setting Up a Referral Center for Placenta Accreta Spectrum

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Introduction

The incidence of placenta accreta spectrum (PAS) continues to increase worldwide paralleling the increased rates of cesarean section [1] and other gynecologic and reproductive interventions. Given the magnitude of the problem, and the technical expertise and resources required to manage these patients safely, "centers of excellence" (CoE) have been established in many countries. While this is prudent, and is to be commended, the lack of a standardized definition of what constitutes a CoE and meaningful oversight complicates the issue. It thus behooves us to establish criteria for those institutions who claim the distinction of being a PAS referral center CoE and to be clear about what it takes to truly be a CoE as defined by outcomes and best practices, not just in name. By definition, a CoE is "a specialized program within healthcare institutions which supply exceptionally high concentrations of expertise and related resources centered on particular medical areas and delivered in a comprehensive, interdisciplinary fashion" [2].

In 2015, the American College of Obstetricians and Gynecologists (ACOG) and Society of Maternal Fetal Medicine (SMFM) developed a system for risk-appropriate maternal care facilities. This system is based on the expertise of the medical team and the region of operation. The aim was to reduce the overall maternal morbidity and mortality in the USA [3]. This is the basis of the levels of maternal care (MLOC) system which is now operational in many states. In the MLOC system, hospital designation is defined in a manner similar to the neonatal ICU designation system, whereby Level I centers offer the most basic level of care and Level IV centers offer comprehensive, complex, multidisciplinary care for the highest-risk patients. Both

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the ACOG and SMFM strongly recommend that patients who have PAS receive both medical and surgical care at a high-level center (MLOC III or higher) [4]. In 2021, the state of Texas has enacted a law (SB1164) requiring women with PAS to be referred to an MLOC III or IV facility for evaluation and management. Management in a facility with a designated program and multidisciplinary team has been shown to significantly improve maternal morbidity and mortality in PAS patients [4]. Specifically, women who deliver in such centers are at a reduced risk for needing a massive transfusion and for being subjected to re-operation when compared with delivery in a less specialized setting [5]. Despite published recommendations, as of 2013, only 25% of obstetricians polled by ACOG reported that they regularly referred patients with suspected PAS to a CoE [6]. We aim to describe the conditions and resources required to set up a PAS CoE and to highlight potential questions a referring provider and patient should ask of referral centers.

What Constitutes a PAS Center of Excellence?

Ideal management begins with early and accurate identification and diagnosis of PAS, preferably in the early antenatal period. This is accomplished mostly using ultrasound during the second trimester anatomy survey; however, cesarean scar implantation and signs of developing PAS may be seen in the first trimester. Magnetic resonance imaging (MRI) may be used (but is often not required) as an adjunctive imaging modality [7, 8]. Regardless of the imaging modality used, much of the diagnostic accuracy depends upon the experience of the examiner and quality of imaging obtained; therefore, expertise in obstetric imaging is crucial in order to ensure accurate, and timely, diagnosis, which significantly improve maternal outcome [9].

Adequate coordination of a multidisciplinary team comprised of personnel with the necessary expertise and skills is key for any PAS CoE. The “team of teams” should consist of, but not be limited to, specialists in maternal-fetal medicine (MFM), imaging (ultrasound and other forms of imaging), pelvic surgery (i.e., gynecologic oncology or urogynecology), obstetrical anesthesia, general surgery, vascular surgery, urology, interventional radiology, neonatology, and blood transfusion. Skilled nursing leadership, particularly those with experience in the management of postpartum hemorrhage and patients of high surgical acuity, should be involved [4, 10]. This broad range of expertise is highly recommended given the unpredictability of PAS during the course of pregnancy and the likelihood of need for complex surgery and the possible surgical complications that may arise at any given time.

While all of the members of every team may not be actively involved in every PAS case, it is essential that they be aware and ready to respond when such cases are planned and carried out. Since most CoE hospitals will be major obstetric referral centers, it is essential that the members of the PAS team be available on a 24/7 basis

for these patients given the unpredictability of outside referrals and of the onset of labor or bleeding that may necessitate delivery ahead of schedule [9] (Fig. 13.1).

Concise and up-to-date guidelines should be available for all team members including those addressing preoperative, intraoperative, and postoperative care [9]. As far as is possible, all patients should be evaluated preoperatively in the PAS center ahead of time to ensure ample time for multidisciplinary team planning, patient counseling, and coordination of care. Many centers present their known cases at a multidisciplinary conference in order to discuss the planning, preparation, and timing of delivery. Any unique medical and social issues for the case are also reviewed [10].

The importance of an adequately staffed and supplied blood bank cannot be overemphasized. Sufficient blood products to allow an ongoing massive transfusion should be available 24/7. Whole blood packed red blood cells, fresh frozen plasma, cryoprecipitate, platelets, cell-saver technology, tranexamic acid, and lyophilized fibrinogen concentrate (Riastap®) should all be readily available [11–13].

PAS surgeries can be extremely complex and carry a high risk of maternal morbidity. Patients can rapidly become hemodynamically unstable and are at risk for rebleeding and reoperation. For this reason, postoperative recovery is often carried

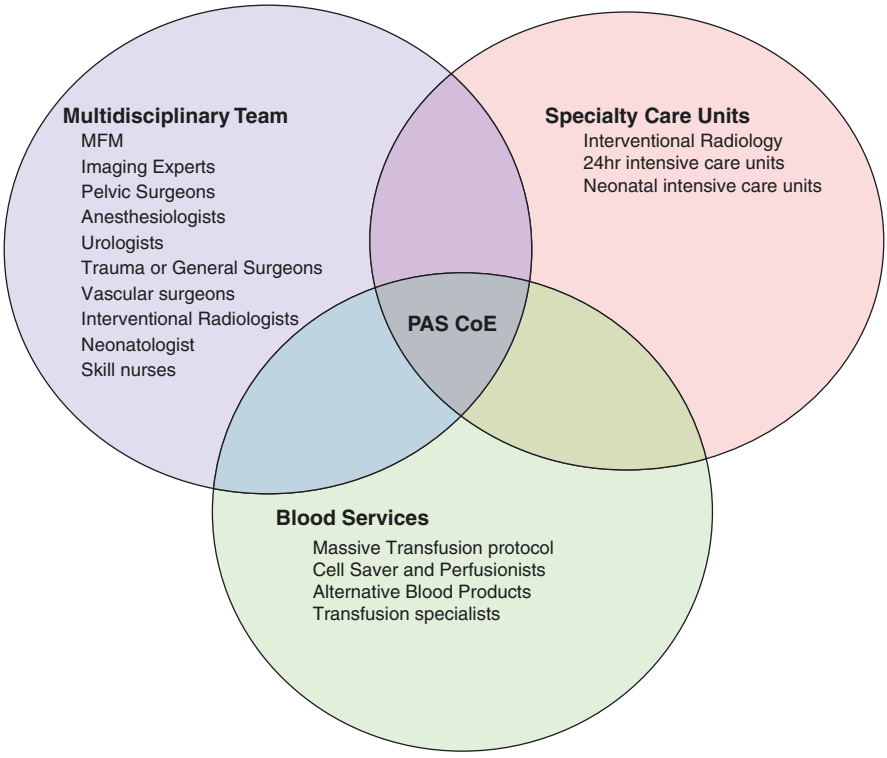

Fig. 13.1 Criteria for placenta accreta spectrum center of excellence

out in intensive care setting [10] where the one-to-one nursing-to-patient ratio and availability of sophisticated respiratory and cardiovascular support allow a rapid and comprehensive response to any emergency.

A Quick Overview

Every PAS center of excellence should have its own checklists for admission, surgical process, and postoperative recovery. The patient is typically admitted to the PAS CoE 5–7 days prior to surgery for controlled preparation. Once the patient is admitted, a standardized order set is used by the physician to ensure all necessary consults, blood testing, and blood bank preparations are made in a timely way. A paper checklist is completed by the patient's primary nurse and kept in the chart.

If the patient begins to bleed unexpectedly or go into labor, the team will be notified immediately and the on-call team can respond within 30 min. In our institution the MFM team will be notified first, and once the patient is evaluated, the other multidisciplinary teams involved are called in as required. The OR staff is always notified at the same time as the anesthesiology team, blood bank personnel, and neonatal ICU so that all of the teams are working contemporaneously toward the surgery [14].

Research

Progress in the field of PAS management is an ongoing endeavor, and it is important that PAS CoEs, regardless of their size, should be transparent in their outcomes (with quality improvement programs and committees and public disclosure of outcomes) and as much as possible engage in collaborative or individual institution research programs [14]. The level of research support varies between different centers and is highly dependent on the volume of patients seen at that CoE. For smaller centers, the ability to collaborate with larger similar centers and networks becomes important [14]. Given the increasing incidence of PAS (now around 1:500 deliveries in the USA), well-powered studies can now be contemplated if CoEs are open to collaborate with each other.

Conclusion

Patient safety is clearly the highest priority and responsibility for any prospective or established PAS CoE. Institutional and community support of a multidisciplinary team is a key, and crucial, component of any PAS CoE. Potential challenges include internal and external resistance from colleagues, referring doctors, and competing

institutions, financial demands, and possible negative publicity around any unfortunate maternal outcomes [8]. However, it is important for the clinicians, administrators, and community to stay focused on the bigger clinical picture during the development of a CoE and on the goal which is to decrease maternal morbidity and mortality in patients with PAS and to provide the best possible medical and surgical care.

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