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The Different Faces of Abortion

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Introduction

Abortion is a medical procedure that can be employed to save lives or as an expression of bodily autonomy. In the minds of many, however, it is an issue rife with ethical controversy. Abortion sits at the intersection of race, gender, sexuality, (dis)ability, religion, and more in medicine: women and people who can become pregnant were and now, because of the United States Supreme Court's decision to overrule *Roe v. Wade*, are once again afforded few legislative rights. The doctor/trainee/patient experience is also impacted by the controversies surrounding abortion: providers unable to provide abortions legally may try to help in other ways, and patients without the guidance of health-care providers may seek dangerous options if they feel they have no other choice.

Images of the harm involved with using physical methods of self-induced abortion like knitting needles, clothes hangers, or throwing oneself down a flight of stairs are far more visually obvious than, for example, a flower. However, the use of herbal abortifacients also involves significant risk of severe morbidity and mortality. By juxtaposing these methods, the viewer is stimulated to think of the

history of abortion and the legal, social, and medical context of abortion.

Research Methods

I utilized Google Scholar to find herbal abortifacients and physical methods of self-induced abortion using the following search terms:

- Abortion
- Abortifacient
- Herbal
- Plant
- Self-induced
- Trauma
- Morbidity
- Mortality
- Medication
- Pill

To learn more about alternative herbal medicines used as abortifacients, I read a number of articles (see References) and compiled a table of the plants mentioned in each (Table 1). I then found the scientific names of the plants (sometimes only the common name was used in the article). In an effort to distinguish historical fact from contemporary misinformation, I focused on three plant species which were recorded in multiple articles and also native to the United States/America: pennyroyal (*Mentha pulegium*), sage (*Salvia officinalis*), and black cohosh (*Actaea/Cimicifuga racemosa*). I decided to paint these three plants in a classic triptych, with the intention of the viewer being “surrounded” by the art—straight on, right, and left.

Table 1. Cimicifuga/actaea racemose

Source, Country	Common Name	Scientific Name
Ciganda & Laborde, 2003 Uruguay	Ruda	Ruta chalepensis/graveolens
	Cola de quirquincho	Lycopodium saururus
	Parsley	Petroselinum hortense/crispum
	Pennyroyal/poleo	Mentha pulegium
	Yerba de la perdiz	Margiricarpus pinnatus
	Oregano	Origanum vulgare
	Guaycuru	Statice brasiliensis
	Celery	Apium graveolens
	Cedron	Simaba cedron
	Floripon	Brugmansia suaveolens/arborea
	Espina colorada	Solanum sisymbriifolium
	Arnica	Arnica montana
	Bardana	Arctium lappa
	Fennel	Foeniculum vulgare
Grossman et al., 2010 USA	Rue	Ruta chalepensis/graveolens
	Sage	Salvia officinalis
	St. John's wort	Hypericum perforatum
	Black/blue cohosh	Cimicifuga/actaea racemosa
	Black walnut	Juglans nigra
	Oak bark	Quercus (genus)
	Common ragweed	Ambrosia artemisiifolia
Kuo-Fen, 1982 China	Snakegourd root	Radix trichosanthis
	Tian hua fen	Trichosanthis kirilowii maxim
Gold & Cates, 1980 Mexico, India	Cottonroot bark (Mexico)	Gossypium herbaceum
	Pulsatilla (India)	Pulsatilla (genus)
	Rue	Ruta chalepensis/graveolens
	Parsley	Petroselinum hortense/crispum
	Cohosh	Cimicifuga/actaea racemosa
	Sage	Salvia officinalis
	Pennyroyal	Mentha pulegium

Table 1 (continued)

Source, Country	Common Name	Scientific Name
Nikolajsen et al., 2011 Tanzania	Black-jack	<i>Bidens pilosa</i>
	Benghal dayflower	<i>Commelina africana</i>
	Creeping tick trefoil	<i>Desmodium barbatum</i>
	Cassava	<i>Manihot esculenta</i>
	African basil	<i>Ocimum suave</i>
	Old world diamond-flower	<i>Oldenlandia corymbosa</i>
	None	<i>Sphaerogyne latifolia</i>
Zhang et al., 2021 China	Chinese herbal medicine	<i>Persiscaria orientalis</i>
	Cotton root	<i>Gossypium arboreum</i>
	Ergot	<i>Claviceps purpurea</i>
	Marjoram	<i>Origanum majorana</i>
	Peppermint	<i>Mentha piperita</i>
	Spearmint	<i>Mentha spicata</i>
	Pennyroyal	<i>Mentha pulegium</i>
	Rosemary	<i>Salvia rosmarinus</i>
	Rue	<i>Ruta chalepensis/graveolens</i>
	Savin Juniper	<i>Juniperus sabina</i>
	Wormwood	<i>Artemisia absinthium</i>
	Myrrh	<i>Commiphora myrrha</i>
	Fern	Polypodiopsida (class)
	Garlic	<i>Allium sativum</i>
	Asafetida	
	Asarum	<i>Asarum caudatum</i>
	Colocynth	<i>Citrullus colocynthis</i>
	Squirting cucumber	<i>Ecballium elaterium</i>
	Pomegranate	<i>Punica granatum</i>
	Jalapa	<i>Mirabilis jalapa</i>
Birthwort (Virginia)	snakeroot)	
Aristolochia (genus)		
Aloe	<i>Aloe vera</i>	

Artistic Methods

I used photographs and artistic representations of the three plants to pencil sketch a guide before I began painting using acrylic paint on 5" x 7" water-color paper and various paintbrushes. I wanted viewer to experience the botanical beauty of the plants “interrupted” by the harsher visual experience of knitting needles (paired with sage), clothes hangers (paired with pennyroyal), and misoprostol pills (paired with black cohosh).

The three methods of self-induced abortion I chose are well known to cause significant morbidity and mortality—knitting needles, clothes hangers, and pills (misoprostol). Knitting needles and clothes hangers can cause uterine perforation, predispose to infection, and cause other trauma to the female reproductive tract when they are used to try and induce abortion. Misoprostol can be used safely in medical abortions overseen by a medical professional, but it is also prescribed for stomach ulcers. It can be dangerous when it is used off-label and/or illegally as an abortifacient, potentially causing pain, bleeding, or sepsis, requiring hospitalization, or even causing death (Damalie et al., 2014).

Results

In my research, I wanted to determine the pharmacological mechanism of action of these alternative herbal medicines. My findings are as follows:

Pennyroyal

- Principal component of essential oil: pulegone
- Mechanism of action: unclear. It has been shown that pulegone inhibits myometrial con-

tractions, similar to the voltage-dependent calcium channel blocker nifedipine. This suggests a different method of action as an abortifacient such as relaxation of blood vessels and inadequate uterine-placental perfusion (Soares et al., 2005). Additionally, pulegone is metabolized to a hepatotoxin in mice (Gordon et al., 1987).

Sage

- Principal component of essential oil: thujone (diastereomers α -thujone, β -thujone) (Raal et al., 2007).
- Mechanism of action: GABA antagonist. Sage inhibits the inhibitory neurotransmitter GABA, causing neurological overactivity. Thujone is the active agent in absinthe and is considered a convulsant (Hold et al., 2000). It has been shown that sage essential oil (fed to pregnant mice) negatively influenced distribution of embryos according to nucleus number (Domaracky et al., 2007). Additionally, liver, vascular, and kidney damage were found in the fetuses of pregnant rats who were treated with sage leaf aqueous extract (El-Ghareeb et al., 2016).

Black Cohosh

- Principal component of essential oil: triterpene glycosides (including cimicifugoside M and cimifugin, which can serve as indicators for species identification) (He et al., 2000).
- Mechanism of action: unclear. It has been shown that black cohosh extract, which is sold as an over-the-counter medication called Remifemin, is suitable as a treatment of choice for menopausal symptoms. Black cohosh

preparations have been shown to inhibit luteinizing hormone (LH) secretion in menopausal women. (Foster, 1999).

Discussion

It could be that abortion is induced with pennyroyal use because of general stress on the pregnant person's body, but it may also increase the risk of serious medical outcomes secondary to abortion. This falls in line with general concerns about complementary/alternative medicine usage where there are unknown or unclear sequelae that may put the user at risk. As a GABA antagonist, sage exerts an effect on a pregnant person's body, but could also induce abortion via organ damage to the fetus itself. If abortion is incomplete, the fetus could be born with medical issues, further burdening the person who was seeking abortion. In the case of black cohosh, I suspect that it could be used as a contraceptive because in menstruating women, ovulation is caused by an LH surge, and black cohosh has been shown to inhibit LH secretion. However, LH plays less of a role in pregnancy, so its mechanism of action as an abortifacient remains unclear.

In my search for sources of morbidity and mortality surrounding self-induced abortion, several recurring themes began to appear. It was no surprise to me that the illegality and stigma of abortion worsen outcomes for people who are pregnant and wish not to be. Relatedly, the reasons for choosing to self-induce abortion can be more structural (barriers to access such as geographic distance from legal abortions, lack of health insurance), or more

personal (desire for privacy, avoidance of shame). One recent article by Moseson et al. (2022), suggests that a high proportion of transgender, nonbinary, and gender-expansive (TGE) people attempt abortion without clinical supervision. The lack of healthcare provider knowledge and discrimination TGE people experience compounds the barriers that may already be in place for others.

Conclusion

It is clear to me that as a future healthcare provider, it will take action beyond my scope of practice to ensure safe abortion access for my community and beyond. There is a multitude of research proving the safety and efficacy of medication abortion with misoprostol and mifepristone, for example, but what physicians may consider medical fact is tangled with political will, religious beliefs, and emotion. I hope to continue my work with the Medical Students for Choice organization and the American Medical Association to protect abortion as an act of bodily autonomy.

I recognize that abortion is a positive right in that it requires action from others (i.e., provision of medication or procedure by physicians, financial assistance from health insurance, etc.), but that does not render it invalid. I see arguments for and against abortion as arguments about autonomy butting heads—the pro-choice side wants to exercise bodily autonomy, the pro-life side wants to exercise their morals. The pro-choice side, however, is not expanding the boundary of their autonomy into paternalism.

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