Of Lemons, Yams and Crocodile Dung: A Brief History of Birth Control

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Abstract

Human beings are an ingenious species. Especially, it seems, when it comes to matters of family planning and the control of fertility. For millennia, men and women have made use of some extraordinary methods to prevent conception and although the most significant advances in birth control have occurred within the past 100 years, we truly owe a debt of gratitude to those ancient pioneers. Traditional methods that date back centuries provided inspiration for the development of some of today's most reliable contraceptives, including the birth control pill and the copper-bearing IUD. Here, we provide a brief history of some of these birth control methods, both for interest and as a tribute to the inventiveness of the human mind.

The Condom

Don't forget – put it on before you put it in."[1]

Rubber. Safe. Sheath. Dome. The condom has gone by many names. Even the origin of the word is a point of contention amongst historians of contraception. Some claim that in the 1600s, a certain "Dr. Condom" supplied King Charles II of England with the first animal tissue sheaths in an attempt to keep the King from fathering illegitimate children.[2] Others say that "Colonel Cundum" was the father of this invention, having developed the condom in a bid to halt the incidence of sexually transmitted infections among troops during the war between Oliver Cromwell and soldiers loyal to King Charles II. A look at the etymology of the word condom provides another explanation: in Latin, "condon" simply means receptacle.

Historians do, however, agree on the origins of the practice of sheathing the penis with a protective cover to prevent unwanted pregnancies and the transmission of disease. It all began in the 1600s when men wore condoms fashioned from fish and animal intestine.[3] The most popular variety was made from sheep caecum – a flexible and thin membrane. Another finely crafted model was equipped with an elegant silk ribbon at its base, which helped the user secure the pouch over his penis.

Because early condoms were individually produced, they were rarely discarded. Indeed, condoms were typically re-used. As recently as the 1940s and 50s, animal membrane condoms were washed, covered in petroleum jelly, and kept in little wooden boxes next to the marital bed, ready for re-use.[4] "Lambskin" condoms are still available today, however they are now disposable and should only be used once. And while sheep gut can provide a barrier to sperm, the membrane pores are large enough to allow the transmission of viruses, so they do not provide effective protection against all sexually transmitted diseases.

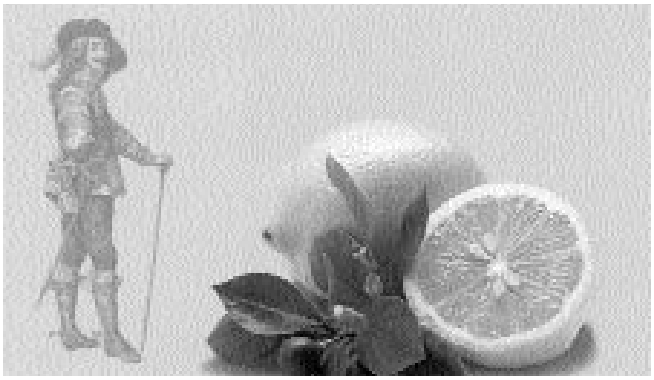
Mass-produced rubber sheath condoms supplanted handcrafted condoms starting in 1844. This innovation was due to the ingenuity of an American who is best known for producing automotive parts. It was Charles Goodyear who patented the vulcanization of rubber.[5] The vulcanization process (which consisted of treating rubber with sulphur and heat) resulted in the production of durable, thin, strong, and relatively cheap condoms.

Today, pharmacy shelves and specialty shops sell condoms of varying shapes, colours, textures, and even flavours. These design innovations have made condoms pleasant to use.

Whatever the flavour, people have long known that condoms could be used to prevent unwanted pregnancies. However, because doctors "prescribed" condoms to protect men from 'the clap' (gonorrhea) and 'the pox' (syphilis) when they had pre-marital or extra-martial intercourse, the condom has carried the stigma of being associated with disease and promiscuity.[6] Even today, many school districts oppose the distribution of condoms among students despite evidence of growing incidence of HIV infection among teenagers.[7]

Cervical Caps and Diaphragms

In the 18th century, the famous womanizer, Casanova, was reputed to wear condoms made of fine hand-sewn linen.[8] A passionate man, Casanova was also known to employ less conventional contraceptive measures when condoms were not at hand. Most notably, he devised a rather clever cervical cap out of a lemon.[9] The half lemon, with pulp extracted, was fitted over the woman's cervix. It's anyone's guess as to whether it was the occlusive effect of the lemon or it's acidity that made this technique efficient.



While Casanova's technique was noteworthy, he was not the first to use female barrier contraceptive techniques. Plugs made of animal dung and sea sponges have been used for this purpose. Women have also inserted leaves or seaweed into their vaginas in an attempt to build a sperm barrier. In China today women can buy small sheets of plastic film to cover the cervix.[10]

Nowadays the most frequently used female barrier contraceptive is the rubber diaphragm. First invented in the 1880s, the diaphragm's main action is to block off the upper end of the vagina. The device can also hold spermicidal cream, which adds to its effectiveness.

Chemical Contraception

"Things so that a woman may not conceive in order that she might been seen marriageable"

~ *Arnold of Villanova (1240-1311 C.E.)*

Ever since the first oral contraceptive pill appeared on the American market in 1960, "the pill" has been heralded as a liberator of women and a catalyst for the feminist movement.[11] Widely regarded as a modern medical breakthrough, few people realize that the pill is merely the latest in a long line of chemical methods of birth control that stretches all the way back to antiquity. In fact, the first recorded recipe for an oral contraceptive is found on the Berlin Medical Papyrus, written in Egypt around 1300 B.C.E.[12] This recipe instructs a woman to "...fumigate her vagina with emmer seeds..." and then drink a mixture of oil, celery and sweet beer for four consecutive mornings in order to "...loosen the semen". Although this sounds far-fetched (in addition to down-right unpalatable), experiments performed in 1983 showed that high doses of a celery plant extract resulted in pregnancy termination in 33% of a group of pregnant lab rats.[12] Dismal statistics by today's standards, but the results do prove that a plant as seemingly benign as celery can affect fertility. The Ebers Medical papyrus from c.1550 B.C.E. contains a recipe for a vaginal suppository that contained acacia fruit and was touted as an effective emmenagogue (a compound that induces menstruation). Once again, modern science put the plant to the test and showed that, when fed to mice, acacia seeds reduce pregnancy rates by 100%.[12] Further proof that the ancients seemed to know a thing or two about contraception.

One of the earliest contraceptive pioneers was Soranus of Ephesus, a Greek physician of the 2nd century C.E. who practiced in Rome and wrote extensively on obstetrics, gynecology and pediatrics. Many of his texts exist to this day, and within them can be found an impressive list of plants that were recommended for use as oral contraceptives, suppositories and abortifacients: galbanum, silphium, opopanax, myrtle, rue, white pepper, cow parsnip and pomegranate, to name just a few.[12] These herbs appear time and again throughout the medical texts of classical Greece and Rome, and it seems that at least one of them was too efficacious for its own good! The herb that Soranus calls "silphium" is thought to be a relative of the giant fennel, and at one time it grew extensively in the region we now call Libya. A dry, arid region, silphium was just about the only thing that could be counted on to grow reliably, and fortunately for the inhabitants of area, wealthy Greeks and Romans were willing to pay top dollar for this medicinal plant. Although used as both a cough remedy and a flavour enhancer in Roman cuisine, the true reason for silphium's popularity was its reputation as a potent oral contraceptive. So great was the demand for this plant that the city of Cyrene was supported almost entirely by its sales, and by the 4th century C.E., silphium was extinct.[13] Its closest surviving relative is asafetida, a plant whose root sap is used to flavour Worcestershire sauce. Tests of this herb and other species of fennel in rats showed that they are able to inhibit the implantation of fertilized ova at rates of 40-50%. One fennel species prevented pregnancy in rats 100% of the time when fed to the animals within three days of coitus! When we consider that the ancients viewed these cousins of silphium as poor substitutes for the real thing, it is easy to understand how this plant was harvested to extinction.[13]

Modern testing has shown that the effects of these herbal remedies were most definitely physiological, not merely psychosomatic, as some historians would have us believe.[12] Rue contains the chemical pilocarpine, a cholinomimetic alkaloid used today as a treatment for glaucoma, and as a component of the chloride sweat test for cystic fibrosis.[14] Interestingly, pilocarpine is also used by veterinarians to induce abortion in horses.[12] In addition, white pepper contains piperine, an oxytocic compound that can stimu-

late myometrial contractions while cow parsnip and pomegranate exhibit estrogenic activity.[13]

Through the ages, many different herbs were recommended by many different people, all intended to help women control their own fertility. Some people chose not to mince words, and identified the plants as contraceptives and abortifacients. Muhammad ibn Zakariya al-Razi (c. 865-925 C.E.), one of Islam's most famous scholars, recorded instructions for "…a preparation of myrrh for raising the fetus and provoking the menstrua."[12] Arnold of Villanova (1240-1311 C.E.), a physician and teacher in Montpellier, recommended a number of abortifacients as well as several oral contraceptive preparations that included willow leaves, juniper seed and ivy. Hildegard of Bingen (1098-1117 C.E.), the noted German abbess, physician and, later, saint, is a little more delicate when she describes herbs such as feverfew and tansy, listing them only as regulators of menstruation. Abortifacients such as oleaster and asarum are mentioned only as a warning to pregnant women to avoid them lest they cause "...a danger to her body...".[12]

Plants were not the only substances that women would ingest in order to prevent or terminate an unwanted pregnancy. Hippocrates recommended that women drink a suspension of copper ore,[12] while English women of the 17th century were advised to try drinking mercury (but only if all else failed!).[13]

Even women on this side of the Atlantic had methods for controlling their fertility. Before the arrival of the Europeans, aboriginal women in modern-day New Brunswick would drink tea brewed from dried beaver testicles in order to prevent conception.[17] It actually sounds quite logical if we assume that there was enough androgen left in the dried tissue to create a hormonal extract. Mexican women have traditionally eaten a particular species of wild yam called the Barbasco root, and it was the observation of the root's contraceptive effect that led researchers to isolate the compound responsible: a hormone called diosgenin.[17] This hormone is structurally very similar to progesterone, and was used as a precursor in the manufacture of the first-ever synthetic female hormone. When combined with estrogen, this yam-derived progesterone gave the world "the pill". Not bad for a potato!

Lest we be fooled into thinking that "natural" methods of birth control have been relegated to the dustbin of history in this day and age of condoms, hormonal injections and nonoxinol,[9] we need to include a word now on an herb called pennyroyal. Pennyroyal is a member of the mint family, and has been noted for its abortifacient properties since the times of Hippocrates.[15] It grows wild throughout Asia, Europe and North America, and is therefore easily accessible for those people who know what they are looking for. Unfortunately, it is also easily accessible to those people who do not know what this herb can do. Sold in health food stores and over the Internet as an herbal remedy for fainting, flatulence, gout, gastrointestinal complaints, hepatitis, and anxiety, pennyroyal can also cause CNS toxicity, hepatic and renal failure, gastritis, pulmonary toxicity and death. In 1994, a 24 year-old American woman died of multi-organ failure after self-medicating for two weeks with pennyroyal extract in an effort to terminate what turned out to be an ectopic pregnancy.[15] Many of the herbs used as contraceptives and abortifacients are potentially harmful if taken incorrectly, and many are readily available as herbal medications for purposes other than birth control. For example, feverfew is sold as a remedy for migraine headaches, but is also one of Hildegard of Bingen's "menstrual regulators". Rue is marketed as a component of a back pain remedy, and myrrh (another contraceptive known to the ancient Greeks) is sold as an antiseptic, a mouthwash and as a supplement for general health maintenance.[16] It becomes obvious that all health care professionals need to be aware of the herbal remedies that are available, and know which their patients may be taking.

Conclusion

Contraception today, as always, is more than just a question of personal preference. Condoms diaphragms, pills and jellies--each contraceptive method is a reflection of social, cultural, medical, political and even legal forces. Indeed, in Canada, the accessibility of the birth control pill starting in 1961 led to a decline in birthrate. In this same period, women began to enter the workforce in unprecedented numbers. By giving women reproductive freedom, the contraceptive pill changed the face of Canadian society forever.

In 2002, contraception is a global political issue. Contraceptive methods are key players in the control of a world-wide population explosion. And, the promotion and use of condoms is a matter of international interest as HIV continues to spread through unprotected sex.

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