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Case Series

Implanon: subdermal single rod contraceptive implant

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ABSTRACT

Implanon is a single rod contraceptive implant which provides protection for three years. The development of subdermal contraceptive implant has been an important improvement in the contraceptive technology in India. Mechanism of action of Implanon is by ovulation inhibition and increase in viscosity of cervical mucus. The side effects associated with Implanon includes irregular periods, weight, gain, acne, headache and breast tenderness. Insertion of implant is an operating procedure done in day care by a skilled care worker. Implanon is proving to be a safe and highly effective long-acting reversible contraceptive.

Keywords: Contraceptives, Implants, Implanon, Subdermal

INTRODUCTION

Contraception is the need of the hour. One of the newest medications in the hormonal contraceptive class is an etonogestrel implant Implanon.[1] This implant offers women another option for preventing unplanned pregnancies.[2,3] The state health society of Bihar launched single rod subdermal implant and provided training to doctors for its insertion and removal. It has now become one of the methods of contraception among the various basket of choices provided under the state government's programs.

Implant comes in the form of applicator with needle for single use and is inserted sub-dermally on the inner side of the non-dominant upper arm.

The applicator consists of transparent protective cap, textured area for facilitating proper grip, slider which lies on top of applicator and a bi-bevelled needle-one bevel point positions needle to puncture the skin at 30 degrees angle and the other bevel point on the needle facilitates lifting of the skin after the needle has been inserted.

The implant is a single rod 4 cm long and 2 mm in diameter with core and skin. The core contains etonogestrel 68 mg placed in the core. It binds with high affinity to progesterone receptors in target organs. It inhibits fertility by inhibiting the release of luteinizing hormone, one of the reproductive hormones important in ovulation.[4-6]

Insertion of implant is an operating procedure performed by a skilled provider which takes only a few minutes. It is important to ensure that the implant is inserted well so that its removal is easy. Improper insertion can lead to challenges during removal.

Requirements during insertion include a marker pen, a measuring scale, swab on sponge holder for cleaning the inserting area, beta-dine solution, lignocaine injection (1%), pressure bandage, surgical adhesive tape, sterile gloves.

Steps of insertion

After fulfilling all the criteria for insertion, the patient is asked to lie down with the forearm placed at the back of their head, the ear touching the wrist. The medial epicondyle is identified. With the help of a measuring scale a point is marked about 8 to 10 cm away from the epicondyle. Another point A is marked about 4 cm below that point. From this point one more point is marked about

4 cm horizontally away from point A. Both these points lie below the sulcus where major nerves and blood vessels traverse. The area is then cleaned with the help of a betadine swab from inside out and infiltrated with 1% lignocaine tracing a wheal at the insertion point and advancing up to 5 cm along the insertion track approximately the length of the implant. We then with draw the needle slowly injecting the remaining local anaesthetic into the track. After ensuring the numbness of the area, we then proceed to insert the implant. The applicator is first checked for presence of the implant and then the applicator is held at the dotted area. We then remove the needle sheath by sliding it horizontally in the direction of the arrow away from the needle. With the free hand, we stretch the skin around the insertion site with the thumb and index finger and the puncture the skin with the tip of the needle angle about 30° and insert the needle only up to the bevel of the needle. Then while visualising the needle the applicator is inserted in the horizontal position parallel to the surface of the skin while continuing to lift of the skin with the needle take to ensure subdermal placement. We slide the needle to its full length towards the guide mark, making sure that the entire length of the needle is inserted under the skin.

While keeping the applicator in the same position, we unlock the pulp purple slider by pushing it slightly down and moving it back until it completely stops. We then remove the applicator and verify the presence of the implant in the women's arm immediately by palpating the area. We ask the client also to feel the length of implant avoiding the puncture site. Pressure is applied at the puncture site. If there is no bleeding a sterile gauze is applied over it. A pressure bandage is applied snuggly around it.

Post insertion instructions

The patient should keep the insertion site dry and clean for five days to prevent the chances of infection. The outer dressing should be removed after two days, and the inner dressing should be removed after 5 days. Routine work can be resumed immediately by the patient, but repeated touching of the insertion site or applying unusual pressure to the site, including carrying heavy weights is avoided for five days. The patient should refer to a healthcare personnel if the puncture site becomes inflamed.

CASE SERIES

About 10 implants were inserted in ESIC Bihta in obstetrics and gynaecology department. Most of the patients were in lactational amenorrhea. None of the patients had any complaints during insertion. Follow up of the patients was done after 1 week, 1 month and 3 months. None of the patients reported any inflammation at puncture site. Only complaint of the patients was of spotting which they were able to ignore as it did not interfere with their daily activities. No failure was reported.

Figure 1: Single rod subdermal implant along with applicator.

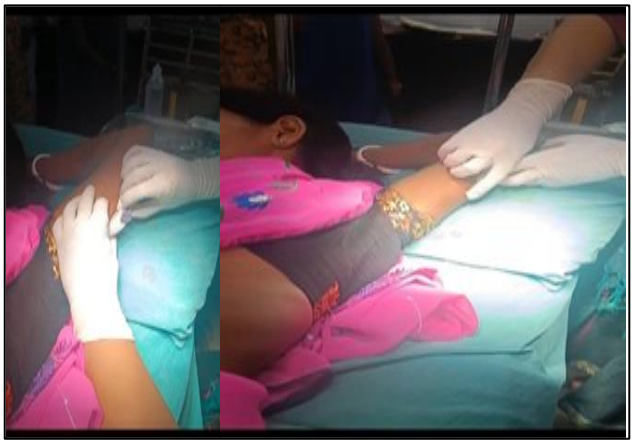

Figure 2: Insertion of implant and palpation of implant after its insertion.

Table 1: Case presentation.

Case no.	Age (In years)	Parity	Age of the youngest child	LMP	Time of insertion	Complains during follow up after 1 week	Complains during follow up after 1 month	Complains during follow up after 3 months
1	24	Primi	2 days	LA	Post partum	No	No	No
2	24	Primi	3 days	LA	Post partum	Slight pain	No	No
3	19	Primi	4 days	LA	Post partum	No	No	No
4	24	Multi	7 days	LA	Post partum	Heaviness in arm	No	No

Continued.

Case no.	Age (In years)	Parity	Age of the youngest child	LMP	Time of insertion	Complains during follow up after 1 week	Complains during follow up after 1 month	Complains during follow up after 3 months
5	32	Primi	2 months	LA	Interval	No	Spotting	Spotting
6	33	Multi	2 years	3rd day of menses	Interval	No	Spotting	Spotting
7	23	Primi	8 days	LA	Post partum	No	No	Spotting
8	29	Multi	9 days	LA	Post partum	No	No	No
9	36	Multi	1 day	LA	Post partum	No	No	No
10	26	Primi	1 day	LA	Post partum	No	No	No

DISCUSSION

Consequences related to unintended pregnancies have both social and economic repercussions.[7] In recent years, the trend in contraception use has changed and many new contraceptive methods are being developed keeping in mind the needs of its users. With the development of synthetic polymers, it has become possible to develop delivery systems with a long duration of action which continuously release low amounts of hormones. Some advantages of long term contraceptives include the lack of the patients' need to pay attention to them and their reliability without strict need of compliance. Disadvantages include dependence on proper health care trained personnel to initiate and end therapy, the requirement of minor surgery for insertion and removal of implants, irregular bleeding episodes.[8] Insertion of implant is a working procedure and is effective for three years. There is early return to fertility after removal. It does not interfere with sexual intercourse and pelvic examination is not required prior to use. Insertion of implant also has non-contraceptive benefits include that include protection from ectopic pregnancy and symptomatic pelvic inflammatory disease. It may also improve anaemia by reducing menstrual blood loss due to medical changes such as amenorrhea.

Implanon has been enlisted under essential priority lifesaving medicines along with other contraceptives in WHO 22nd model list of essential medicines.[9] Implant is mainly used as a contraceptive option although it has been used in cases of endometriosis and as hormone replacement therapy. As per world contraceptive use, 2022, the Sub-Saharan African countries report the highest use of implants.[10] The experiences from many countries of Asia, Africa and South America have shown that the acceptability and continuation of subdermal implants increase with proper counselling, client selection, proper insertion and follow up.

CONCLUSION

The current trend in smaller family size throughout the world is resulting in increased demand for contraceptive methods over an extended period of time. Disadvantages of long-acting contraceptives include dependence on trained personnel for insertion and removal and high prevalence of bleeding irregularities. Informing patients extensively about all of the advantages and disadvantages of long-acting contraception before insertion is important and optimises success.

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