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Pregnancy in Uro-Genital Fistulas (Ugfs): A Challenge to Obstetricians and Gynaecologists

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[&]Abbreviations:

UGF: uro-genital fistula; UGFs: Uro-genital fistulas; RIFs: Reinforcement interposition flaps; ANC: Antenatal care; DM: Diabetes mellitus; LSCS: Lower segment caesarean section; IURG: Intra-uterine retarded growth; IUD: Intra-uterine death; VVFs: Vesico-vaginal fistulas; HIV: Human immunodeficiency virus; STDs: Sexually transmitted diseases; USG: Ultrasonography: NGOs: Non-government organizations; WHO: World health organization; IVF: In-vitro fertilization; NICU: Neonatal intensive care unit; PICU: Pediatric intensive care unit; ICU: Intensive care unit; HDU: High dependency unit; DVT: Deep vein thrombosis

1. Abstract

1.1. Purpose: To create awareness about challenges faced by obstetricians and gynaecologists while managing women with Uro-Genital Fistulas (UGFs).

1.2. Aims and Objectives: To solve different challenges faced before and after the pregnancy in uro-genital fistula affected women, in the interest of both the mother and baby.

1.3. Material and Methods: The challenges mentioned in this study were observed by the authors during the period 2004 -2016 while managing different uro-genital fistula affected women presenting in the Vesico-Vaginal Fistulas (VVFs) Clinic under the department of Burns and Plastic Surgery at Postgraduate Institute of Medical Sciences (PGIMS), Rohtak. Observations: Different challenges were present in different patients at different stages of (i) uro-genital fistula, (ii) pregnancy, (iii) caesarean delivery, (iv) follow-up periods, (v) marital relations and harmony and the (vi) sexual and reproductive life. The overall quality of life improved after successful repair of uro-genital fistula.

1.4. Conclusions: Successful management of challenges of women affected with uro-genital fistulas (UGFs) requires comprehensive planning by the Fistula Team, i.e., (i) firstly to facilitate pregnancy and (ii) secondly to help them maintain pregnancy till the pre-planned scheduled date of caesarean delivery and (iii) finally a vigilant post-operative care and adequate follow-ups for wellbeing of both the mother and the baby.

2. Introduction

Occurrence of Uro-Genital Fistulas (UGFs) in women is the worst complication and has adverse impacts on all spheres of life, may it be personal, familial, marital, social, financial, cultural, job and work related, future-related, psycho-motor related, neurological, urological, gynaecological, [1] obstetrical, physical or mental and the sexual and married life with husband and siblings. The continuous involuntary vaginal leakage of urine in a uro-genital fistula affected woman and disharmony because of development of extra-marital relations of male partner further precipitates mental trauma, social torture and financial insecurity. More so, due to multi-factorial reasons, these women with uro-genital fistulas are

less likely to become pregnant, and are more prone to repeated miscarriages including Intra-Uterine Retarded Growth (IURG) or Intra-Uterine Deaths (IUD). Occurrence of pregnancy in women with or without their repaired uro-genital fistulas poses a serious challenge not only for themselves but also for the attending obstetrician or the gynaecologist at different stages of reproductive cycle like: (i) before conceivement, (ii) during pregnancy, (iii) at the time of caesarean delivery and (iv) in the postpartum period and longer-term of follow-ups. The obstetricians and gynaecologists have to bear the maximum burden of such affected women (Figure 1).

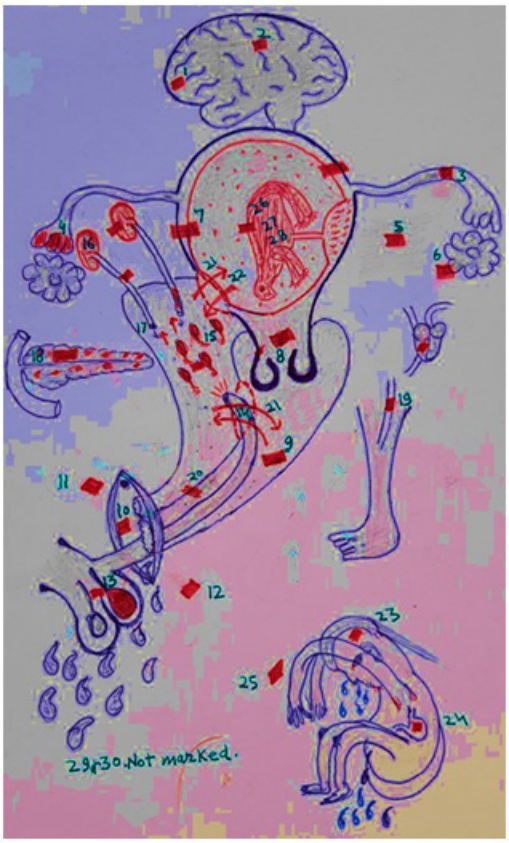

Figure 1: Diagrammatic representation of fistula associated morbidities. 1. Behavioural changes. 2. Psycho-somatic disorders. 3. Tubal blockage. 4. Fimbria adhesions. 5. Pelvic cellulitis. 6. Scarring around ovaries. 7. Uterine synaechias. 8. Cervical stenosis. 9. Vaginal stenosis. 10. Introitus stenosis. 11. Perineal contracture. 12. Perineal dermatitis (fungal and bacterial). 13. Testicular atrophy due to epididymo-orchitis. 14. Intercourse through VVF. 15. Spermicidal effects of urine. 16. Ascending urinary tract infection (pyelonephritis). 17. Ureteric orifice stenosis. 18 Pancreatitis. 19. Deep vein thrombosis. 20. Lower genito-urinary tract infection and painful and incomplete sexual intercourse. 21. To and fro infection between urinary and genital tracts through fistula tracts. 22. Accidental rupture/perforation of amniotic membrane. 23. Withdrawn posture (depression). 24.Loss of appetite. 25. Suicidal tendency. 26. Intra-uterine retarded growth. 27. Intra-uterine death. 28. Premature delivery. 29.Permanant infertility, deserted life, separation or divorce. 30. Need of invitro fertilization/ artificial insemination/ adoption to complete family (29 & 30 not marked).

3. Material and Methods

This study is based on the (i) examination and the (ii) signs and symptoms of uro-genital fistula affected women who presented either in the Departments of Obstetrics & Gynaecology and or the Vesico-Vaginal Fistulas (VVFs) Clinic at PGIMS, Rohtak during the period 2004 – 2016 [2].

4. Observations

Pregnancy: in presence of active uro-genital fistula:

Pregnancy is difficult in women having actively persisting uro-genital fistulas due to multiple etiological factors mentioned below:

1. Fear of sexual intercourse.
2. Fear of pregnancy.
3. Incomplete, difficult or painful sexual intercourse.
4. Spermicidal effects of urine.
5. Cervical stenosis.
6. Endometritis, adhesions and synechiae.
7. Tubal blockage.
8. Bladder intercourse through the tract of vesico-vaginal fistula.
9. Pelvic peritonitis or frozen pelvis.
10. Utero-vesical fistulas.
11. Uretero-uterine fistula.
12. Uretero-tubal fistulas.
13. Uretero-cervical fistulas.
14. Psychosomatic disorders.
15. Uro-genital spasm (functional/ non-organic blockage of genital tract).
16. Upper and lower uro-genital tract infection and infestation.
17. HIV, syphilis and other STDs.
18. Tension and or depression.
19. Hormonal imbalance due to affected ovaries, higher centres and cognitive functions due to stress.
20. Metabolic disorders like DM and uraemia following continuous distress.
21. Malignancy of genito-urinary tract or of other organs.
22. Introitus stenosis.
23. Vaginal stenosis.
24. Colpocleisis (partial or near total or total).
25. Vaginal ulcerations and vaginismus.
26. Associated recto-vaginal fistulas.

4.1. Note

The fistula affected women, who fail to conceive, had to (i) listen

all types of personal comments and (ii) bear social and family torture despite the facts that failure to get pregnancy is [3] not only due to women related factors rather the adverse factors of the male partner are equally responsible like:

1. Oligospermia or azoospermia.
2. Heavy smoking.
3. Heavy alcoholism.
4. Impotency.
5. Depression or hesitancy.
6. Premature ejaculation.
7. Urethral stricture, diverticulum or fistula.
8. Deformed spermatogenesis.
9. HIV, syphilis, diabetes mellitus or uraemia.
10. Psychosomatic disorders and other anatomical and functional morbidities.

How to help such women to get pregnant in the presence of uro-genital fistula?

The UGFs women need multi-corner support to facilitate pregnancy. The women with ideal circumstances only succeed in becoming pregnant, and that too with difficulty [4].

1. Thorough examination of the affected woman and assessment of the characteristics of uro-genital fistula will help in planning the modus operandi for treatment of active fistula.
2. The counsellor will make the woman aware of the consequences of long-term persistence of uro-genital fistula so that the woman gets her-self mentally prepared to bear any untoward event that could happen in case she becomes pregnant in the presence of uro-genital fistula, and such events could be repeated miscarriages, intra-uterine retarded growth, intra-uterine death, stillbirth or failure to conceive in future. There are risks of even mortalities. The treating obstetrician and gynaecologist also has crucial role to play regarding issuance of future advice like control of uro-genital infections and moral boosting. The psychologist too makes the woman mentally stable even in the presence of uro-genital fistula and failure in getting conceivement. Adoption is the only solution left under such circumstances.
3. The urologist advises the woman to get her urinary system examined and investigated to help eradication of infection and management of the adversely affected upper and lower urinary tracts.
4. The plastic surgeon ensures long-term corrective measures of the uro-genital fistula against its future recurrence by providing a durable and axial-pattern water-proofing flap for re-strengthening of the repaired fistula.
5. Fistula team lays down all necessary guidelines for management of the fistula affected woman before, during and after the pregnancy.
6. Various corrective measures could be: (i) correction of vaginal and introitus stenosis, (ii) control of uro-genital infections and infestations, (iii) control of HIV and STDs, (iv) correction of cervical stenosis, (v) release of uterine synechiae, (vi) correction of tubal blockage, (vii) control of pelvic peritonitis, (viii) lengthening of short vaginal depth, (ix) repair of third-degree perineal tears, (x) optimal control of metabolic disorders and (xi) application of re-enforcement interposition flaps (RIFs) for mechanical and biological benefits of the repaired uro-genital fistulas.

4.2. Role of Obstetrician and Gynaecologist During Pregnancy in The Presence of Uro-Genital Fistula

1. Pregnancy and the counsellor: Women are advised to stay free of tension to avoid uro-genital spasm and fears of IURG or the IUD or the stillbirth.
2. Regular ANC is required.
3. Timely hospitalization is advised as per the scheduled date of caesarean delivery.
4. Only LSCS is advised and no short- or long-term labour pains are allowed to be continued for vaginal delivery.
5. Care for oligo or poly hydramnios.
6. Risk of disruption of sutures with recurrence of fistula.
7. Adoption of temporary or permanent family planning procedures to limit family.
8. Guidance about best timings for conceivement (no active infection, matured fistula or adequately healed repair).
9. Nutritious diet, adequate movements and light exercises.
10. Investigations (urine routine and culture sensitivity, blood biochemistry to assess the status of metabolic disorders and USG as and when required to assess pelvic organs and the developing and growing foetus).
11. HIV, STD, bacterial infection, infestations to be controlled or eradicated.
12. Encouragement for adoption where pregnancy fails to occur even after waiting for adequate time period after the fistula repair.

4.3. Role of Plastic and Reconstructive Surgeon

1. Tension free independent closure of bladder and vagina walls at right angle to each other and its water-proofing by interposing a vascularized axial pattern flap to ensure long-term stability and integrity of the repaired fistula against its break-down under stretch and strain caused by labour pains and full bladder. These women are to undergo only LSCS and no vaginal delivery is ever permitted.

2. Through examination to know about detailed characteristics of fistula, circum-marking and circum-infiltration of fistula, circum-dissection and minimal marginal excision for freshening of fistula before closure, right-angled independent closure of vaginal and bladder walls through appropriate surgical route, suitable surgical technique and execution of axial-pattern water-proofing flap are all important.
3. Plastic surgeon will better correct the introitus and vaginal stenosis, perineal tear and tuboplasty for blocked fallopian tubes to facilitate intercourse and pregnancy.

4.4. Role of Urologist

1. Control of recurrent urinary tract infection.
2. Creation of normal capacity of bladder by its augmentation cystoplasty.
3. Correction of urethral and ureteric stricture.
4. Reliving of hydro-uretero-nephrosis.
5. Management of renal failure, stones, haemorrhage and infection.
6. Urinary diversion (through bladder, ureters, renal pelvis or renal parenchyma).
7. Correction of bladder diverticulum and its complications.

4.5. Role of Psychologist and Psychiatrist

1. The major role is towards stabilization and rehabilitation of fistula affected women at all stages, i.e., before, during and after the pregnancy.
2. Normal functioning higher centre and cognitive functions also play role in easy conceivement. There is no persistent spasm of uro-genital tract.

4.6. Role of Counsellor

1. The counsellor has great role to play in mental stabilization and social rehabilitation of fistula affected women at all the stages and during different stressful periods. There remains no social isolation and discrimination, therefore, a familial and social harmony is maintained. The fistula repair is advised at appropriate time when the patient is fully stable and cooperative.
2. Re-union of deserted and broken families is also possible through proper counselling.

4.7. Role of Fistula Homes and Ngos

1. Here the main role is to rehabilitate the fistula affected women before and after the fistula repair, financial help, moral boosting, social and mental support. Rehabilitation does not mean just comfortably staying and eating but to make them independent and self-earning by way of providing them appropriate skill training.

4.8. Role of Endocrinologists

1. The hormonal imbalance both in females and males could be the reasons for failure of pregnancy or its premature spontaneous termination/ miscarriage. There must be anatomically, functionally and hormonally normal uro-genital tract to facilitate conceivement and to carry the pregnancy uneventfully till its full term.

4.9. Role of Andrologist

1. The andrologist in association with endocrinologist will be able to take care of oligospermia, azoospermia and the deformed spermatogenesis.

4.9.1. Role of IVF Expert

1. In the presence of anatomical or structural problems in uro-genital system, but with normal spermatogenesis and ovulation, the IVF technology could help in conceivement. Artificial insemination is other alternative way to solve this problem.

4.9.2. Role of Husband and Siblings

1. Husband and siblings play crucial role in re-union of deserted/ separated/ divorced couples. Family, society and other relatives play equal role in proper mental and social rehabilitation of the fistula affected women.

4.9.3. Role of Treating Fistula Team

1. The fistula team is the only body that can help the fistula women at all times like: (i) before the repair of fistula; (ii) during repair of fistula; (iii) after repair of fistula; (iv) before pregnancy; (v) during pregnancy; (vi) during caesarean delivery; (vii) after the delivery; (viii) during follow-up periods; (ix) in recurrences; and, (x) proper social, mental, psychological and sexual rehabilitation. This has been possible, because the Fistula team has different members from different specialities; therefore, the team can render help of wide-spectrum to the fistula affected women.

4.9.4. Role of WHO, Central and State Governments, Local Administration, Social Media and Newspapers

2. Their major role is (i) to make awareness of the adverse impacts and consequences of uro-genital fistulas in pregnant women, (ii) prevention of fistulization and re-fistulization, (iii) guidance to facilitate management of different aspects of this social stigma and (iv) rehabilitation of such affected women including encouraging these socially discarded women to come and join the main stream of society as they were before the development of uro-genital fistulas.
3. Different socio-cultural programs are arranged for their moral boosting and preventing them affected by different psychological problems.

4. Efforts are initiated to promote and get the separated and deserted women united with their family, husband and siblings.

Note: Adequate counselling; psychotherapy; mood elevation; stress-free environment; control of infection; treatment of HIV and STD; maintenance of personal and perineal hygiene; urine examination; cultures of urine and other vaginal discharge; blood biochemistry; management of metabolic and hormonal disorders; contraceptive measures during early phase of repaired fistula; repeated USG to assess status of internal pelvic organs; correction of menstrual irregularities; treatment of oligo/ azoospermia; management of abnormal spermatogenesis; correction of etiological factors responsible for repeated miscarriages; correction of structural abnormalities of upper and lower uro-genital tracts; advice regarding frequency of intercourse; creation of internal desire to conceive; proper deposition of ejaculate in vaginal depth; artificial insemination or IVF where sexual intercourse fails due to anatomical abnormalities of genital tract; correction of low urinary pH to prevent its spermicidal effects; assurance and privacy in financial and personal matters; psychological and financial support from the side of husband, sibling and family; and, management of spasm of uro-genital tract responsible for functional/ inorganic blockage of fallopian tubes, are some of the minimal requirements for facilitating and sustaining pregnancy in fistula affected women to have healthy live births. These will decrease incidence of IURG, IUD, stillbirths, low-weight and pre-mature births.

4.9.5. What to Do During Pregnancy in A Fistula Woman?

1. Thorough and repeated counselling.
2. Get regular ante-natal care (ANC) and check-ups.
3. Regular checking and monitoring vital signs.
4. Regular monitoring of weight (over/ under weight) and Hb.
5. Pus cells, bacteriological and sugar estimation in urine.
6. Culture sensitivity of urine and vaginal discharge.
7. Regular monitoring of blood biochemistry and status of metabolic disorders.
8. Adequate nutrition to prevent deficiency of proteins, minerals and vitamins.
9. Assessment and regulation of hormonal levels.
10. Maintenance of psycho-socio-familial harmony.
11. Desirable movements, light exercises and meditation as per the tolerance.
12. Abstinence for a minimum period of three months after caesarean delivery.
13. Avoid stress and trauma.
14. Adequate privacy and security (social and financial).
15. Immunization as per requirements.
16. Antibiotics as per culture sensitivity and requirements.
17. Examination of bladder and genital tract only when emergent to do so.
18. Avoid constipation, diarrhoea and straining.
19. No invasive intervention of any kind unless emergent.
20. Early detection and treatment of oligo/ poly hydramnios
21. Avoiding possible causes of IURG or IUD and stillbirth.
22. Detection of foetal and or placental anomalies, and management accordingly.
23. Avoiding bearing down or labour pains.
24. Avoiding strenuous work, riding, jolting, and long travelling, that can precipitate premature onset of labour pains and termination of pregnancy.
25. Seeking consent for pre-scheduled LSCS, because vaginal delivery is not allowed even in those with secured closure of UGF.

4.9.6. What to Do at The Time of Caesarean Delivery?

1. Hospitalization before due date.
2. Planned and scheduled LSCS by senior obstetrician.
3. No artificial rupture of membrane or amniocentesis.
4. No induction of labour.
5. No additional digital examination or instrumentation unless warranted.
6. Adherence to absolute aseptic measures and techniques.
7. No attempt for fistula repair at the time of caesarean delivery.
8. Washing of uterine, vaginal and bladder cavities, if contaminated.
9. Diversion colostomy in cases of associated recto-vaginal fistula.
10. Final closure of uro-genital and recto-vaginal fistulas after 3 to 6 months or one year later when all active inflammation has subsided and tissues have matured to become soft, supple and capable to hold sutures.
11. Watch for retained products of conception and placental remnants.
12. Prevention of extension of fistula by not doing un-necessary examinations and instrumentations through fistula tract.
13. Accurate recording of the operative findings, characteristics of fistula and the location of ureteric orifices.
14. Not to perform any other minor or major elective surgical procedure.

15. Paediatrician to take care of the delivered baby.
16. Prior arrangement of NICU or PICU for premature babies.
17. Control of haemorrhage from uterus, placenta, fistula or iatrogenic tears.
18. No emergency hysterectomy or fistula intervention.
19. Assurance of safety of LSCS and well-being of the caesarean delivered baby by providing all required lifesaving supports.
20. Special consent of the woman and husband for tubectomy, urinary and or faecal diversions.

4.9.7. What to Do After Delivery?

1. The fistula affected and delivered women might require ICU/ HDU help.
2. Adequate counselling and psychotherapy.
3. Assurance of structurally and functionally normal uro-genital tract after repair.
4. All around rehabilitation.
5. Good diet and nutrition to maintain proper health.
6. Perineal exercises to improve urinary continence.
7. Moderated movements, meditation and physical work without exhaustion.
8. Personal and perineal hygiene.
9. Evaluation and control of uro-genital infections and infestation.
10. Closed bladder drainage under all aseptic conditions.
11. Care of urinary diversion.
12. Care of colostomy.
13. Maintenance of socio-familial harmony.
14. Monitoring of pre-mature and under-weight baby in NICU or PICU.
15. Adequate breast feeding of the baby.
16. Control of post-partum haemorrhage, infection and vaginal discharge.
17. Preventive measures against DVT.
18. Due attention and care by husband and siblings for better bonding and re-union.
19. Vigilant post-operative care after LSCS.
20. Timely medications and check-ups.
21. Prevention of mental instability in cases of IUD or still birth through prior counselling.
22. Adequate availability of blood, plasma and necessary emergency drugs.
23. Avoid depressive and stressful environment.
24. Infusion of positivity and exit of negativity by meditation and yoga or other natural means.
25. Actively participating in all social, cultural and physical activities without shyness, fear or hesitation.

4.9.8. What to Do During Long-Term Follow-Ups?

1. Mental and moral boosting.
2. Psychological stability.
3. Medications as and when indicated.
4. Adequate nutrition.
5. Control of HIV/ STDs, infections and infestations.
6. Personal and perineal hygiene.
7. Abstinence from sexual intercourse for a minimum of 3 months.
8. Use of contraceptive measures like condoms.
9. Regular monitoring of weight and vitals.
10. Repeated sessions of counselling.
11. Anti-depressive therapy whenever indicated.
12. Participating in mood elevator programs.
13. Repair of fistula after 3 months to 6 months of caesarean delivery, and after one year in cases of recurrences.
14. Tubal ligation or hysterectomy after due consent of the couple.
15. Attending all social and cultural events without feeling inferiority, shyness or hesitation.

5. Discussion

Uro-genital fistulization is the worst scene, a social stigma and extreme of torture which the expectant mothers might have ever imagined/ thought following live births. This is the beginning of ruining of a family. Other reasons for fistulization could be trauma, tumour, [5] radiation and the diagnostic or therapeutic intervention or instrumentations (iatrogenic) of pelvic organs. Rarely this could be congenital in occurrence1. Formation of uro-genital fistulas (UGFs) is not simply a structural deformity of uro-genital tract but a major physiological, psychological, social and sexual stigma on the affected women, hence, they are under constant stress and fear of risks of family breakdown, separations, divorce and continuously decreasing quality and quantity of bonding among husband, siblings, family members and other close relatives. The magnitude of such stress increases many folds when such women (i) fail to become pregnant due to multiple unknown reasons, (ii) find themselves alone and un-attended during pregnancy, (iii) get neither any financial nor psychological or moral support from husband and family members, (iv) are left alone in hospital for caesarean delivery, (v) are not adequately cared in the post-caesarean periods and (vi) have to manage their frequent follow-ups in the presence of financial constraints [6].

Such pregnant women with UGFs are at higher risks of (1) malnutrition, (ii) intra-uterine retarded growth, (iii) intra-uterine deaths, (iv) still births, (v) pre-mature onset of labour and delivery following traumatic, iatrogenic or spontaneous rupture of membrane, (vi) recurrent mis-carriages, amenorrhoea and decreased fertility, (vii) oligo-hydramnios, (viii) decreased immunity and body defence, (ix) ascending upper genito-urinary tract infection and infestation, (x) psychological instability, mental disorders and social boycott, (xi) risks of family breakdown, (xii) financial crisis due to loss of job and work, (xiii) neo-fistulizations, (xiv) increase in the dimensions of the existing fistula due to bearing down, (xv) disruption of previous inadequately repaired fistula and many others (Figure 1).

Pregnancy in women having uro-genital fistulas (UGFs) is minimized due to multifactorial reasons. The incidence of pregnancy could range from 2.5 - 40% after repair of the uro-genital fistulas2. The LSCS is performed as an elective procedure and the uro-genital fistulas are repaired at an appropriate time when the fistula site is adequately matured and is deemed to have become fit enough to sustain wide dissection and tension-free layered closure. During pregnancy, there are risks of recurrence of fistula, stillbirth including death of the affected mother3. Even these women could have neo-fistulisation. The decreased rate of pregnancy could be due to infrequent intercourse for fear of breakdown of repaired fistulas, vaginal and uterine scarring, ascending uro-genital infections and infestations, psychological disturbances and depression.

The fistula bearing pregnant women require extreme of care (i) at all stages of pregnancy (before becoming pregnant, during pregnancy, at the time of caesarean delivery and post-delivery), (ii) during longer-term of follow-ups, (iii) to sustain better social and familial life, (iv) to regain and maintain self-esteem and (v) to continue normal sexual and reproductive life with their husbands. There is improvement in different parameters, signs and symptoms of the fistula-affected women after the repair of their fistulas4.

To minimize the incidence and severity of these complications, the fistulas affected women need special and vigilant care at all levels with or without concurrent pregnancy, sepsis, metabolic disorders, co-existing recto-vaginal fistula, colostomy or urinary diversion. These women need not to be un-necessarily examined digitally or endoscopically unless emergent to do so. Successful repair of fistulas, closure of diversions and having a baby (IVF, artificial insemination, adoption) will promptly boost all aspects of their life and living. The caesarean section is done first and the fistula is repaired later on5. In the presence of utero-vesical fistula, the amnion could be seen herniated in to the bladder6. Such patients would require extreme care during digital or instrumental examinations due to risk of perforating the membranes, thus initiating premature delivery.

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