Management of a Patient with Missing IUD Strings

Differential

1. IUD in-situ in correct position
    - String coiled in endocervical canal or endometrial cavity
    - String short or broken
2. Unnoticed expulsion
3. Intrauterine pregnancy brings strings into the uterus as it grows
4. Malpositioning of the device following perforation
    - Embedment in the myometrium
    - Translocation into the abdominal or pelvic cavity

Work up of Missing Strings

1. Assess pregnancy status
    - Pregnancy test positive: locate and date pregnancy; manage accordingly
    - Pregnancy test negative:
        i. Attempt to sweep strings from canal:
            - Twirl an endocervical brush in the cervical canal
            - Try using a thread retriever to snag the strings
            - If available use a colposcope to aid visualization of the strings with magnification. This is ideally done with an endocervical speculum to peer into the endocervical canal to visualize threads. If visible – do not attempt to pull them down unless patient desires removal.
        ii. If not able to visualize strings – (pregnancy test negative) do ultrasound (or if x-ray is more available may start with KUB)
    - Starting with Ultrasound:
        i. Ultrasound shows IUD in situ: go to #1 below
        ii. Ultrasound shows no IUD in situ: order KUB and if no IUD seen it has been expelled.
            - If IUD seen on KUB and not seen in uterus on ultrasound: IUD is translocated.
        iii. Ultrasound shows possible embedment: order 3D ultrasound or CT
    - Starting with KUB
        i. No IUD is seen it has been expelled
        ii. IUD seen: must ALSO do ultrasound to determine location unless it is clearly translocated (seen not near uterus)

Management and Prevention

1. IUD determined to be in situ:
    - Desires retention
        i. May leave in place for remainder of IUD lifespan
        ii. Option: annual pelvic ultrasound in lieu of string check

- Desires removal
    i. Consent for uterine instrumentation procedure
    ii. Bimanual exam
    iii. Probe for strings in cervical canal
    iv. Administer cervical block
    v. Apply tenaculum
    vi. Real-time ultrasound guidance may help, if available
    vii. Choose extraction device
        - Patterson alligator forceps to search within the uterine cavity, using a tenaculum to stabilize the uterus before intrauterine manipulation:
            i. No cervical dilation necessary
            ii. Within the uterine cavity gently open/close forceps completely at quarter turns and progressive depths until “purchase” of the IUD stem or string (or arm).
        - Thread Retriever or thread retriever with hook
            - Begin at fundus and twirl along anterior, then posterior, uterine wall from fundus to canal
        - If ring-shaped IUD: use crochet hook or 3-5 mm suction curette

2. Additional measures, for removal as indicated
    - Pain management
        - Cervical block + oral NSAIDs for pain
        - Conscious sedation
    - Cervical dilation
    - Osmotic dilator
    - Rigid dilators
    - Misoprostol may facilitate IUD extraction(not placement however)
3. Expulsion
    - Occurs in 2-10% placements
    - Unnoticed expulsion may present with pregnancy
    - Risk of expulsion related to
        - Provider’s skill at fundal placement
        - Higher parity
        - Uterine configuration and anomalies
        - Prior history of expulsion
        - Time since placement (↑ within 6 mos but can occur any time)
        - Timing of placement (post placental delivery, post second trimester abortion)
        - Adherence to manufacturer’s instructions to prevent expulsion:
            - Paragard:
                - Re-advance the tube after releasing arms
                - Remove the rod and tube separately
            - LNG IUDs:

        - Ensure device is at fundus before pulling the slider(s) all the way down
        - Ensure the sliders are completely down with no space between the bottom of the slider(s) and the handle before removing the insertion tube
    - Partial expulsion may present with
        - Pelvic pain, cramps, intermenstrual bleeding
        - IUD string longer than previously
4. Embedment
    - If embedment suspected evaluate with 3-D ultrasound or pelvic CT with contrast
        - To decide whether to start the extraction with laparoscopy or hysteroscopy
    - Extract via operative hysteroscopy or laparoscopy
5. Translocation
    - Copper IUDs can cause more adhesions, must extract promptly via operative laparoscopy
    - LNG-IUS is less reactive, but recommend laparoscopic removal
6. IUD Removal in Menopausal Women
    - Strings seen: remove
    - No strings visible…weigh risks
        - Hazards of continuation (post-menopausal bleeding, ? pelvic actinomycosis)
        - Hazards of removal (pain, perforation)
    - Tail-less IUD (e.g., Chinese stainless-steel coil ring) should not be removed unless requested by the patient