HISTOLOGICS

SpiraBrush CX® PACKAGE INSERT - Instructions for use

Cervical Biopsy Device Description:

The SpiraBrush CX® biopsy device is a disposable single use cervical biopsy instrument. The device has a uniquely shaped brush head designed to remove the squamous epithelial layer of the cervix with minimal trauma. The brush head has a twisted wire spine holding semi-rigid double-layered nylon bristles. The brush head has been bent at a 90-degree angle to the 7-inch scored handle. The brush is coiled into a spiral shape, allowing for the circular "face" of the SpiraBrush to be applied directly to an abnormality that is seen on the ectocervix.

SpiraBrush Indications for Use:

SpiraBrush CX® is intended for obtaining a biopsy of suspicious areas or visible exocervical lesions in women for the purpose of obtaining a tissue diagnosis during vaginal examination. Tissue samples obtained by the SpiraBrush CX® biopsy instrument should be evaluated using a histologic technique by a pathologist familiar with the evaluation of SpiraBrush CX® biopsy samples.

Contraindications:

SpiraBrush CX® is contraindicated for use in the following patients:

1. Patients currently on anticoagulant therapy
2. Patients with known bleeding disorders

Warnings / Precautions:

Use of SpiraBrush CX® may cause bleeding requiring application of Monsel's solution or silver nitrate to establish hemostasis in cases where dabbing of biopsy site is not adequate.

In the unlikely event that the brush head separates from the handle during sampling (at the scored mark), remove the handle from the vagina. Using ring forceps, retrieve the brush head from the vagina. If the sampling was complete and adequate (brush head is abundantly covered with bloody-mucoid material), place the sample in an alcohol-based preservative solution for processing. If sampling was not completed or inadequate (brush head not abundantly covered with bloody mucoid material), obtain another sample using another SpiraBrush CX®.

SpiraBrush CX® is not a substitute for endocervical curettage during colposcopy, nor is the SpiraBrush a suitable instrument for this purpose. If endocervical curettage is needed for complete diagnostic work-up, use a suitable instrument.

A cervical biopsy obtained by the SpiraBrush CX® biopsy instrument should be interpreted using the currently accepted microscopic cervical biopsy classification. Such cervical biopsy classification systems include The Bethesda and modified Bethesda Systems. The SpiraBrush CX® device can only reliably sample as deep as the basement membrane, thus the biopsy obtained may not be used alone to rule out the possibility of invasive or micro-invasive disease. If visual examination suggests invasion, punch biopsy or a suitable excision of the transformation zone (cone biopsy or LLETZ) are the preferred procedures for the confirmation of invasion and staging.

The use of SpiraBrush CX® in pregnant patients has not been studied. The benefits of using SpiraBrush CX® in patients who are pregnant must be weighed against any possible risks.

Adverse Events:

None known

Procedure:

SpiraBrush CX® biopsy instrument is used during a vaginal exam to obtain a biopsy of suspicious areas or visible exocervical lesions. The patient is maintained in a standard lithotomy position during the SpiraBrush CX® Biopsy Instrument sampling.

SpiraBrush CX® Biopsy Procedure:

1. The head of the SpiraBrush CX® biopsy instrument (see diagram) is placed directly onto the exocervical lesion or cervical area that is to be biopsied (handle will be at a 90 degree angle to the cervix). The flat surface of the SpiraBrush CX® head tip is to remain in contact with the cervical sampling area throughout the biopsy procedure.

2. Apply firm and steady pressure to keep the brush firmly placed on the cervix, and rotate the SpiraBrush CX® at least three rotations clockwise and counterclockwise (forward and back). Continue rotating the brush head until micropunctate bleeding occurs from the collection site and brush head is abundantly covered with a bloody-mucoid tissue sample.

Sampling with SpiraBrush CX®

Micropunctate Bleeding (Post Sampling)

Adequate Sample Brush head is covered with bloody mucoid material

SpiraBrush CX® Head Removal

1. After completing the SpiraBrush CX® cervical biopsy procedure, avoid any unnecessary manipulation of the tissue sample. Prepare to remove the brush head by holding the handle in both hands, with your fingers on top of the handle and your thumbs beneath.

2. Gently snap the SpiraBrush CX® head from the handle by bending the handle at the scored mark (approximately 1 inch from the brush head).

3. Immediately place the entire SpiraBrush head and tissue sample into a labeled bottle of alcohol-based preservative solution.

Post Biopsy Procedure Patient Follow Up:

Post SpiraBrush CX® biopsy cervical bleeding, if present, may be gently dabbed with cotton or gauze, applying gentle pressure to the cervix until bleeding stops. The vaginal examination can be resumed once bleeding has been controlled.

SpiraBrush CX® Biopsy Specimen Processing (Laboratory):

SpiraBrush cervical biopsy specimens should be processed into a standard paraffin cell block for histologic evaluation after removing the tissue fragments from the brush head.

Cervical Biopsy Tissue Removal from SpiraBrush CX® head:

1. After a suitable period of fixation in the alcohol-based preservative solution, the cervical tissue specimen fragments are to be manually removed from the SpiraBrush by trained tissue processing personnel.

    a. Using protective gloves and sterile forceps remove forceps, uncoil the brush head to make the brush straight.

    b. Cervical biopsy tissue still clinging to the head of the SpiraBrush CX® should be manually removed by the following methods:

        1. Hold the uncoiled brush in or over the preservative vial and scrape the tissue off the brush using forceps. Care must be taken not to crush the tissue fragments between the tips of the forceps.

        2. Holding the handle of the SpiraBrush CX® with forceps, agitate the uncoiled brush head up and down in the preservative vial.

        3. Inspect the brush head to assure that all tissue fragments have been scraped from the brush. If needed, repeat the scraping and agitating until the brush head is cleared of all visible tissue fragments.

    c. After the biopsy tissue specimen has been removed from the head of the SpiraBrush CX®, the head may be discarded in an appropriate receptacle.

2. A standard paraffin cellblock should be prepared and sectioned according to standard laboratory procedure, being certain that samples are obtained from at least 2 levels.

3. The sections should be mounted on glass slides and stained with hematoxylin and eosin.

SpiraBrush CX® Biopsy Microscopic Interpretation:

The cervical biopsy obtained by the SpiraBrush CX® biopsy instrument is intended to be microscopically classified according to currently accepted microscopic cervical biopsy classification. Such cervical biopsy classification systems include The Bethesda, modified Bethesda systems for tissue and the CIN I, II, III reporting system.

Clinical Trials

Conclusions:

Clinical data supports that the SpiraBrush CX® biopsy instrument collected a transepithelial cervical biopsy that was substantially equivalent to a standard cervical punch biopsy and produced a tissue specimen adequate for histologic examination. Information from the histologic examination of the SpiraBrush CX® sample provided diagnostic information on the epithelial layer of the cervix that is equivalent to that obtained by traditional cervical punch biopsy instruments. The safety and effectiveness of the SpiraBrush CX® histology specimen is further supported by LEEP or cone biopsy data. The SpiraBrush CX® biopsy instrument results in less frequent need for hemostasis (control of bleeding) when compared with a standard punch biopsy.

Investigators:

Ob/Gyn physicians trained in the use of the SpiraBrush CX® at 4 separate clinical research sites in the USA.

Purpose:

To determine whether the SpiraBrush CX® cervical biopsy instrument would be able to collect exocervical tissue samples that were diagnostically equivalent to those collected with traditional punch biopsy forceps. To evaluate the differences in bleeding associated with sample collections with both devices.

Patient Population:

Non-pregnant women ages 18 years and older scheduled for a LLETZ procedure with a visible exocervical lesion.

Methods:

Prior to local anesthesia and large loop excision of the transformation zone (LLETZ), women with a diagnosis of cervical intraepithelial neoplasia (CIN) underwent a SpiraBrush CX® brushing of at least 25% but not more than 75% of a colposcopically identified lesion followed by repeat cervical biopsy. SpiraBrush CX® samples were processed using liquid based cytology and cellblock techniques and diagnoses were made by a consensus of three pathologists. A SpiraBrush CX® sample was adequate if basal cells were present. Inadequate samples were not included in the analysis. The histologic diagnosis from the LLETZ specimens was compared with the SpiraBrush CX® sample and the punch biopsy sample. Patient reported pain and physician reported bleeding from the punch biopsy and SpiraBrush CX® were compared.

Results:

52 women were enrolled in the study. 47 women successfully completed the study protocol. 8 SpiraBrush CX® specimens were inadequate. Of the 47 patients that completed the study, 39 women showed abnormal pathology (HPV/CIN 1 or worse) on LLETZ, and 32 women had high grade (or worse) lesions. The punch biopsy correlated with high grade disease in 53% of these women. The SpiraBrush CX® result correlated with high grade disease in 76% of these women using either the cellblock or liquid cytology. There was significantly less pain ($p < 0.001$) and significantly less bleeding ($p < 0.001$) with the SpiraBrush CX® sampling.