



# Sister Mary Joseph's Nodule (SMJN)

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Fig. 1 : Umbilical Metastasis (SMJN) of gastric Adenocarcinoma.



Fig. 2 : Close up View of umbilical lesion



Fig. 3 : Proliferating growth in gastric antrum (biopsy proven adenocarcinoma)

RK.-a 56 yrs old male patient attended OPD with loss of appetite, occasional vomiting and weakness. He was non-diabetic but chronic smoker. O/E –mild anaemia, no lymph-adenopathy, abdomen- a firm elevated plaque like lesion involving whole umbilicus with black crusting in the centre (Figures 1 and 2), no ascites, liver was not enlarged. Biopsy of umbilical lesion suggested adenocarcinoma. Upper GI Endoscopy showed proliferative lesion at gastric antrum (Figure 3), Biopsy of the lesion showed adenocarcinoma. USG abdomen showed liver metastasis. Supportive treatment was given to improve general condition and prepared the patient for palliative surgery, but unfortunately the patient died due to acute anterior wall Myocardial Infarction, on the day before operation.

In medicine, the metastasis of a visceral malignancy to the umbilicus is known as “Sister Mary Joseph’s nodule”. It is a rare but well known clinical sign indicating advanced, often inoperable, metastasizing intra-abdominal epithelial cancer with very poor prognosis. Sister Mary Joseph Dempsey (1856-1939) was the surgical assistant of Dr William J Mayo at St. Mary’s Hospital in Rochester, Minnesota from 1890 to 1915. During this period, while preparing patients with gastric cancer for surgical resection, Sister Joseph noted the association between paraumbilical nodules observed during skin preparation for surgery and metastatic intra-abdominal cancer confirmed at surgery who invariably had a poor outcome and succumbed relatively early postoperatively.

Dr. Mayo first reported the condition as “pants-button umbilicus” in a lecture to the Cincinnati Academy of Medicine in 1928. The Eponymous term SMJN did not exist, however, until 1949, when the English surgeon Hamilton Bailey, in the eleventh edition of his famous textbook “Demonstrations of Physical Signs in Clinical Surgery”, coined the term “Sister Joseph’s nodule” for umbilical metastases.

The most common primary source is the gastrointestinal tract (35 - 65%, commonly gastric cancer, rarely colonic or pancreatic cancer, mostly in men), followed by pelvic (12 - 35%, usually gynecological like ovarian and uterine cancer). In 20 - 30% of the patients the source of the primary tumor remains unknown, rarely urinary or respiratory tract malignancies cause umbilical metastasis.

Tumor may spread to the umbilicus through lymph ducts, blood vessels, contiguous extension, and embryologic remnants. This sign may be the first clinical manifestation of occult internal cancer or indicates tumor recurrence.

The nodule may be painful and ulcerated or firm to hard plaque, sometimes with pus, blood or serous fluid. The average survival time has been reported to be 11 months with < 15% of the patients surviving >2 years. SMJN constitutes 83% of all malignant umbilical tumors, being more common than primary malignant umbilical tumors. The most common histological type is adenocarcinoma (75%).

Once SMJN is discovered, a biopsy, either excisional or fine needle aspiration (FNA), is mandatory to establish diagnosis and to find the possible primary site. Various imaging modalities such as ultrasonography (USG), computed tomography (CT), magnetic resonance imaging (MRI) can aid in establishing the diagnosis. The histopathologic evaluation may show characteristics of the underlying tumor, SMJN usually represents widespread metastasis and treatment is commonly palliative, leading to a poor outcome. This report emphasizes the need for careful evaluation of any umbilical lesion and the importance of histologic diagnosis in case of doubt.

## References

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