

Prevalence and Pathology of Gastric Carcinoma in Zimbabwe A Study of 105 Cases

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Clear understanding of the pathology of gastric carcinoma is essential for diagnosis, treatment and prognosis. The lack of sound guidance in its classification is largely responsible for the paucity of sound contribution about the gastric carcinoma in the tropics. (Paile, 1972 and Mulligan, 1972.)

The gastric mucosa performs complex functions and has a variety of cells for this purpose. The chief cell produces zymogen granules and may undergo hyperplasia in hypercalcaemia and in certain neurocristopathies. The parietal cell which produces hydrochloric acid and the intrinsic factor may become atrophic. Endocrine cells particularly those that secrete gastrin abound in the antrum. These three cells do not play any pathogenic role in the classical gastric carcinoma development and will not be discussed any further. (Kennedy, 1970)

The mucus cell which is derived from the precursors in the necks of gastric glands (mucus neck cell or MNC) secretes anti-autodigestion mucin. The cardiopyloric (gland) cell or CPC secretes, like the Brunner glands of the duodenum, anti-acids. The intestinal cell or IC (absorptive, goblet, Paneth or a combination) is also found in the gastric mucosa through induced metaplastic transformation. These three cells MNC, CPC, and IC give rise to the gastric carcinoma which is by no means a single disease entity and is certainly pleomorphic in its clinicopathological connotations. (Day and Macson, 1978)

MATERIAL AND METHODS

One hundred and five consecutive surgical specimens positive for gastric carcinoma and taken during gastroscopy using fibre optic illumination were studied by light microscopy. The tissue was fixed in 10% buffered formalin, embedded in paraffin, and stained by haematoxylin and eosin, periodic acid-Schiff, and mucicarmine. The age and sex of the patient as well as the site of the biopsy were noted in each case.

RESULTS

Clinical diagnosis of gastric carcinoma was confirmed in all the cases. The histological features permitted four possible diagnoses.

1. **Mucus neck cell carcinoma (MNCC)** showed indifferentiation, signet rings, mucin, diffuse infiltration, and productive fibrosis (desmoplasia).
2. **Intestinal cell carcinoma (ICC)** consisted of glandular structures, atypical nuclei, and amphophilic cytoplasm.
3. **Cardiopyloric carcinoma (CPC)** also consisted of glandular structures, basal nuclei, and foamy cytoplasm.
4. **Carcinoma** which was not otherwise specified (NOS) because of inadequate tumour mass or crush artefact.

Table 1: gives details of the prevalence of gastric carcinoma according to age and sex.

TABLE I
PREVALENCE OF GASTRIC CARCINOMA
ACCORDING TO AGE AND SEX

AGES	MALE	FEMALE	TOTAL
20 - 29	2	1	3
30 - 39	6	2	8
40 - 49	11	7	18
50 - 59	18	15	33
60 - 69	22	13	35
70 - 79	3	3	6
80 - 89	1	1	2
TOTAL	63 (60%)	42 (40%)	105

- Table 2: is a histogram of the distribution of gastric carcinoma according to age.
- Table 3: is a diagram that shows distribution according to sex.
- Table 4: is distribution according to morphological types MNCC, ICC, CPC, and NOS.
- Table 5: shows distribution according to site of the tumour mass in the stomach.

TABLE II

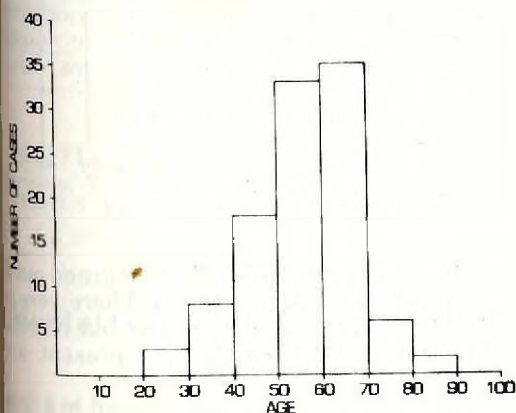
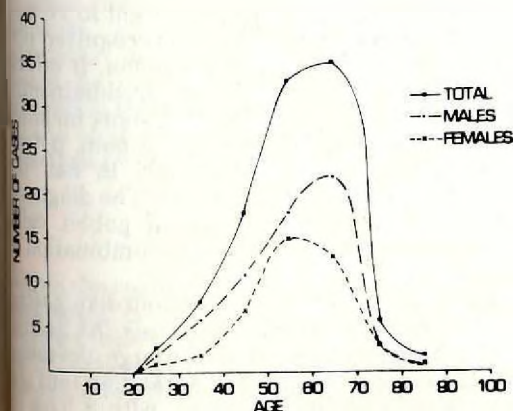
DISTRIBUTION OF GASTRIC
CARCINOMA ACCORDING TO AGE

TABLE III

DISTRIBUTION OF GASTRIC
CARCINOMA ACCORDING TO AGETABLE IV
DISTRIBUTION OF GASTRIC
CARCINOMA ACCORDING TO
MORPHOLOGICAL TYPE

AGE	MNCC	ICC	CPC	NOS	TOTAL
20 - 29	2	0	0	1	3
30 - 39	6	0	1	1	8
40 - 49	9	2	5	2	18
50 - 59	13	8	7	5	33
60 - 69	14	10	8	3	35
70 - 79	3	2	1	0	6
80 - 89	1	1	0	0	2
TOTAL	48 (46%)	23 (22%)	22 (21%)	12 (11%)	105

Types of carcinoma

TABLE V
DISTRIBUTION OF GASTRIC
CARCINOMA ACCORDING TO SITE

	MNCC	ICC	CPC	NOS	TOTAL
Cardia	2	0	7	2	11
Lesser curvature	6	4	0	3	13
Greater curvature	11	13	0	4	28
Pylosis and antum	9	6	15	3	33
Diffuse	20	0	0	0	20
Total	48	23	22	12	105

Morphological type

DISCUSSION

Gastric carcinoma is most commonly diagnosed around 60 years of age. It affects males more than females (male:female ratio of 5:2). The commonest morphological type is the MNCC (46%) followed by ICC (22%) and NOS (11%). The antrum and pylorus (31%) are the favourite site of gastric carcinoma. This is followed, in descending order by greater curvature (27%), diffuse infiltration (20%), lesser curvature (12%) and the cardia (10%).

The classification of gastric carcinoma has remained unsuccessfully challenged or rivalled since its publication in 1954.

The mucus neck cell carcinoma (MNCC) is the most elusive and devastating gastric malignancy. Its vigorous desmoplastic response has given rise to names like linitis plastica, leather bottle tumour, or simply scirrhus carcinoma. It is a diffuse growth usually with signet ring cells. Its prognosis is very bad (51% for 5 years). Rapid spread is its main weapon of inflicting damage. Lymph node metastases are three times and two times more frequent than in the ICC and CPC respectively. At diagnosis only 10% will not have reached stage IV i.e. spread outside the stomach. Postulation has it that it is caused by an absorbed carcinogen.

Intestinal cell carcinoma (ICC) has the best prognosis (36% for 5 years). About 44% will not have reached stage IV at diagnosis. It usually arises from pre-existing intestinal metaplastic cells and may therefore be multicentric. It is a localised fundal growth that appears to be associated with fat soluble carcinogens.

Cardiopyloric carcinoma (CPC) has a better prognosis than MNCC but a worse one than the ICC (20%) for 5 years. About 25% will not have reached stage IV at diagnosis. It arises in the cardia or the pylorus and appears to be associated with steroids.

There is a good correlation between the morphological type of gastric carcinoma and its clinical evolution. The decision of palliation or aggressive therapy should take into account the morphological type of the carcinoma in question.

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