Abstract. Squamous cell carcinoma (SCC) of the nasopharynx is amongst the most common head and neck cancers. However, distant metastases are clinically under-diagnosed, as demonstrated by significantly higher metastatic rates in autopsy studies, compared to clinical studies. The incidence of metastases continues to rise with improvements in diagnostic imaging, locoregional control and survival. Metastases to the colorectum are extremely rare. This is the first case of nasopharyngeal SCC, metastasising to the rectum. A brief review of the literature is performed, with discussion on the screening, diagnosis and treatment of non-primary / metastatic tumours of the colorectum, from SCC and other primary tumours.

Squamous cell carcinoma (SCC) of the nasopharynx is one of the most common cancers of the head and neck. The incidence of metastatic disease is underestimated as demonstrated by 3-4 times higher rates of metastases, reported in autopsy series compared to clinical series, mainly to the lung, bone and liver (1). Metastases to the colorectum are extremely rare and we believe this to be the first published case of nasopharyngeal SCC, metastasising to the rectum. A brief review is included on diagnosis and screening of SCC metastases, and also management of other non-primary colorectal lesions with emphasis to SCC metastases.

Case Report

A 64 year Caucasian male was presented with an ulcerated lesion of the nasopharynx with palpable ipsilateral neck lymph nodes. Biopsy confirmed an undifferentiated carcinoma of the nasopharynx, infiltrating the stroma (Figure 1). Computed Tomography (CT) did not reveal any further metastases and the tumour was Stage IIb. The patient received radiotherapy only, following which clinical condition improved. Eleven months later, he presented with non-specific symptoms of lethargy, abdominal pain and rectal bleeding. Examination revealed a mass in the left iliac fossa and biochemical investigations showed anaemia. Sigmoidoscopy revealed an ulcerated lesion, 20 cm from the anal verge and biopsy confirmed an undifferentiated carcinoma, consistent with the primary nasopharyngeal origin (Figure 2). Subsequent investigations showed further metastatic disease in the liver and splenic, aortic and porta-hepatic lymph nodes. Surgical treatment was deemed inappropriate and the patient died 15 days later.

Discussion

Squamous cell carcinomas (SCC) of the head and neck are relatively common and usually associated with radical surgery and poor outcome. There is male preponderance, with male: female ratio of 4:1, but with some studies reporting increasing incidence in females (2). Prognosis is poor in those with advanced or metastatic disease. The incidence of metastases is underestimated with clinical diagnosis, as demonstrated by three to four-fold increased rates of metastases of head and neck SCC, 26-57% in autopsy studies compared to 5.3%-23.7% in clinical studies (3, 4).

The incidence of distant metastases is rising probably due to improvements in loco-regional control and longer survival and also improvements in diagnostic imaging. Factors consistently associated with development of metastases are late stage (T4 or Stage III/IV), and nodal (N1-3 or 3 or more positive nodes) disease (5). In a review of patients with metastatic head and neck squamous cell carcinoma, more than 75% had Stage III/IV disease (32% Stage III, 43% Stage IV) (1). The nodal stage is thought to
have a greater impact on rate of metastases, compared to the T stage (3, 6, 7). Other risk factors include tumour location (hypo-pharyngeal tumours) and loco-regional recurrence (1). The most common metastatic site is the lung (66-80%), followed by the liver and bone (30%). Intra-abdominal extra-hepatic involvement although rare, is underestimated. An autopsy series of 387 patients with metastatic head and neck SCC found intra-abdominal involvement in abdominal nodes (20%), kidney (16%) adrenals (15%), spleen (9%), small bowel (4%), pancreas (4%) and stomach (3%). Colorectal metastasis was only observed in three patients (0.8%), demonstrating the rarity of this entity (8).

Metastasis to the colorectal region from any extra-abdominal primary is rare. The most common extra-abdominal primary tumours are malignant melanoma, breast and lung tumours with estimated large bowel involvement in 27%, 5.3-12% and 2.2%, respectively (3, 6).

To the authors’ knowledge, this is the first case of SCC of the nasopharynx, metastasising to the rectum.

**Diagnosis.** In view of the rarity of this phenomenon, it is important to consider whether the colorectal lesion represents a metastatic lesion or it is a new second primary tumour. Histological assessment supports the former. Firstly, the morphological features of the colorectal tumour are similar to these of the primary nasopharyngeal. Secondly, SCC in the colorectal region arises almost exclusively at the anal epithelium. A recent retrospective database study reported SCC as the histological subset, in only 0.3% of primary colorectal carcinomas, mostly found in the rectum (9). Thirdly, histological assessment demonstrated the presence of submucosal tumour (Figure 3), but the absence of transition between mucosa and the tumour and intact rectal mucosa (Figure 2). This relegates to a metastatic, rather than a primary lesion.

**Screening following primary treatment.** It is estimated that up to 28.1% of patients with nasopharyngeal SCC will develop distant metastases (6). One study suggested 48% of metastases were detected within 9 months of treatment and 80% were detected within 2 years (3). However, Spector et al. reported a longer median duration to distant metastases of 3.2 years with metastases occurring at up to 6 years, after initial treatment with others, recommending a follow-up period of at least 8 years (10). This emphasises the need for physicians to maintain a high index of suspicion in patients with gastrointestinal complaints, regardless of SCC remission status. Presenting complaints in non-primary colorectal malignancies are usually non-specific, such as lethargy and occasionally rectal bleeding (11). Obstruction and perforation are poor prognostic markers. Investigations such as CT thorax should also be performed in addition to gastro-intestinal investigations to exclude the more common sites of metastases, as screening patients with high risk features, such as bilateral nodal disease, nodes >6 cm or 3+ nodes involved and second primary tumours / recurrence, reveals other distant metastatic lesions in >10% of patients (12). However, accuracy of current imaging modalities must be considered, as even CT sensitivity and specificity for lung metastases is 73% and 80% respectively. Furthermore, 11% of patients with negative pre-operative CT developed lung metastases in 1 year (8). Hence, clinicians should be aware of high risk features of the primary tumour, the limitations of investigations and the concurrent presence of other distant metastases, which may drastically change surgical intent and management.

**Survival and treatment.** Reported survival rates in non-primary colorectal carcinoma vary due to the rarity of the entity, different types of primary tumours and tumour stages, at presentation. In malignant melanoma with segmental bowel involvement, surgery may confer substantial survival benefit, resulting in average survival of 27.5 months, which increases to 34.7 months in node negative disease, and 5 year survival rates of 21% (3). Surgery for colorectal metastases from primary tumours, such as breast or prostate may improve median survival and allow good palliation and resumption of adjuvant chemotherapeutic regimens (5, 13, 14). However, in most cases of SCC metastases, colorectal involvement is part of a diffuse carcinomatosis and the outcome is poor. The reported 5 year survival in SCC with distant metastases is 6.4% (14). Factors associated with poor outcomes are obstruction and perforation with median <10 months survival. At present, although radiotherapy has a palliative role in bony and occasionally lung and brain metastases, it appears to be no role for adjuvant treatment (chemo- or radio-therapy) in colorectal metastases and median survival is short, ranging from 3-5 months. Future strategies, targeting angiogenesis and cell surface receptors, may be useful. In most cases, palliation is preferred. Surgery should only be offered for palliation or isolated colorectal segmental involvement.

**Conclusion**

Metastatic lesions to the colorectum are extremely rare and most commonly occur in malignant melanoma, breast and lung carcinoma. However, head and neck SCC can metastasise to this region, long after initial treatment of the primary tumour. This emphasises the importance of maintaining a high index of suspicion in patients presenting with non-specific gastro-intestinal complaints, regardless of SCC disease status. Investigations should not only determine the extent of colorectal metastases, but should
also exclude other common concurrent metastatic sites and clinicians should be aware of the limitations of current investigations in diagnosing metastases. Although surgery may benefit a few selected patients with isolated segmental disease, overall survival in non-primary colorectal carcinoma, especially SCC primary, is poor. Current adjuvant treatment has no role in these SCC colorectal lesions. Palliative options should always be considered.

References


