Robot-assisted restorative proctectomy with coloanal anastomosis for anorectal malignant melanoma: An unusual case report

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INTRODUCTION

Rectal malignant melanoma is a rare malignancy with poor prognosis which has a reported 5-year survival rate of 10%–20%. Surgical resection of the tumour is the primary management technique, but wide local excision (WLE) or abdominoperineal resection (APR) remains controversial. No robotic surgery used in cases of rectal melanoma has been published in PubMed through January 2019. However, robotic-assisted restorative proctectomy with coloanal anastomosis with intersphincteric resection (ISR) has not been reported yet. Hence, we reported a case with anorectal malignant melanoma treated with robotic-assisted ISR with coloanal anastomosis. The patient has satisfied post-operative life quality, and no local recurrence was noted after 3-year follow-up.

CASE REPORT

A 70-year-old man experienced abdominal fullness sensation and epigastralgia for months. This case had already applied for institutional review board (IRB). During colonoscopy examination, a polyp-like lesion with grey mucosa was noted at the rectum [Figure 1a], 2 cm above the anal verge. Biopsy revealed pathology diagnosis of malignant melanoma. A computed tomography (CT) scan revealed a polypoid lesion at the rectum [Figure 1b]. Positron emission tomography CT revealed a small, enhanced fluorodeoxyglucose avid lesion in the rectum but less imaging evidence of adventitia invasion [Figure 1c].

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APR was suggested to the patient, but he preferred sphincter preservation. Therefore, robotic-ISR with coloanal anastomosis and temporary transverse colostomy was performed. He recovered satisfactorily and was discharged uneventfully after a post-operative hospital stay of 7 days. The colostomy was closed 1 year later. The tissue specimen pathology report indicated a polypoid tumour (2 cm × 1 cm) composed of large, epithelioid cells bearing hyperchromatic and pleomorphic nuclei and forming abundant melanin deposition [Figure 1d], consistent with malignant melanoma, pathological stage T1N0M0. The patient is currently undertaking pembrolizumab immunotherapy for liver and brain metastasis. No evidence of local recurrence was noted during the 3-year follow-up.

**Surgical procedure**

The technique incorporates abdominal and perineal approach. Under endotracheal general anaesthesia, the patient was placed in the Lloyd-Davies position. Trocars were inserted and positioned as shown in Figure 2. A Da Vinci robotic (Intuitive Surgical, Inc., Sunnyvale, CA, USA) system was docked to the left of the patient’s caudal side. Maryland bipolar forceps, a permanent cautery spatula and a double fenestrated grasper were used as robotic instruments. Dissection was completed around the origin of the inferior mesentery artery with apical lymph node dissection, and the superior rectal vessels were ligated using robotic Hem-o-Lok clips and transected. Subsequently, pelvic total mesocolic excision was performed until reaching the pelvic floor. After undocking the Da Vinci robotic system, perineal surgery commenced with stay suture of the anal canal. ISR was performed by dividing the anal mucosa and internal anal sphincter circumferentially. The specimen was pulled through the anal canal, and coloanal anastomosis was performed by a hand-sewn method.

**DISCUSSION**

The incidence of primary anorectal melanoma was reported to be 0.5%–1.6% of all melanomas, making it the third most common location of primary melanoma after the skin and retina.[1] The prognosis is relatively poor, with a reported median overall survival (OS) of only 14–22 months and a 5-year survival rate of <20%.[1]

Surgical approaches of such melanoma are still widely discussed. APR has been considered to obtain greater local control and enable lymph node dissection; however, WLE has become more popular in recent years due to sphincter preservation and a quick recovery.[1] Heeney et al. reported a systemic review that showed no statistical difference in OS between APR and WLE groups.[3] Similarly, Iddings et al. reported OS of 16 versus 18 months for APR and WLE groups, respectively.[4] Hence, Latteri et al. suggested that APR should be considered only when WLE is not possible technically or in case of recurrence. In addition, laparoscopic APR can be applied when technically possible to reduce morbidity and achieve shorter recovery.[1]

Robotic-ISR has increased in cases of lower rectal malignancy because it is technically demanding for total mesorectal excision in the narrow pelvic cavity, especially when the tumour is located just above the anal verge.[3] The robotic surgery system has the advantages of an operator-controlled camera, effective countertraction

**Figure 2:** After a small sub-umbilical incision using the Hasson method, a 12-mm camera port was inserted, and three 8-mm trocars were positioned under direct laparoscopic visualisation. Trocar disposition ‘C’ is a 12-mm camera port; ‘1’–‘3’ are 8-mm trocars for the robotic arm; and ‘A’ is a 5- or 12-mm trocar functioning as an assistant port.
with a third robotic arm and endo-wrist function that can overcome the technical difficulties of using a laparoscope.

To the best of our knowledge, this is the first case report of anorectal melanoma treated using robot-assisted ISR with coloanal anastomosis. This treatment can provide the patient with a better life quality without the need for permanent stoma, and it can obtain a completed lymph node dissection with a favourable negative resection margin. To date, the OS is 38 months without local recurrence, which seems on par with APR or WLE. However, due to the limited case experience, further case series should be conducted to verify our findings in this rare disease.

CONCLUSION

No consensus has been reached on which surgical method is optimal for treating anorectal melanoma. Robot-assisted ISR may be an effective and safe option with favourable clinical outcomes without permanent colostomy.

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Declaration of patient consent

The authors certify that they have obtained all appropriate patient consent forms. In the form the patient(s) has/have given his/her/their consent for his/her/their images and other clinical information to be reported in the journal. The patients understand that their names and initials will not be published and due efforts will be made to conceal their identity, but anonymity cannot be guaranteed.

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Nil.

Conflicts of interest

There are no conflicts of interest.

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