

Early detection of brain metastases in a supervised exercise program for patients with advanced breast cancer: a case report

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Background

Around 25% of metastatic breast cancer (mBC) patients develop brain metastases (BM), which vastly affects their overall survival and quality of life (QoL).^{1,2} According to the current clinical guidelines, regular magnetic resonance imaging (MRI) screening is not recommended unless patients have recognized central nervous system related symptoms.³ The downside of this approach, however, is a possible delay in the detection of BM when early symptoms, like subtle changes in balance or movements, go unnoticed, which could reduce the therapeutic options.

Aim

The aim of this report was to describe a case in which BM of mBC were detected early in a patient who participated in a physical exercise program supervised by a qualified exercise trainer, as part of a randomized controlled trial (RCT).

Case Report

This case report is on a patient who participated in the EFFECT study, a RCT aimed to assess the effects of a 9-month structured, individualized and supervised exercise intervention on QoL, fatigue and other cancer and treatment-related side effects in patients with mBC. The patient was a 75-year-old woman with a diagnosis of mBC (ER+, PR-, HER2-; Ki-67 10%), affecting the bones, lymph nodes, liver and kidneys. At the time of randomization, she was on her third line of mBC treatment receiving Palbociclib and Fulvestrant. She attended the training sessions regularly (86%, 43 out of 50 sessions) and was supervised by the same trainer throughout the exercise program. In month 7 of participation, her exercise trainer detected subtle symptoms, which had not been noticed or reported by the patient herself or her family, and which were unlikely to have been detected by the oncologist or other health care providers at the time, as symptoms were exercise related. These included:

- Unable to walk on a line, complete one leg stand and dual tasking balance exercises
- Requiring longer resting intervals or a decrease in intensity (i.e. workload) while performing high-intensity interval training on a stationary bike
- Seemed a little sleepier and eye movements seemed slower than usual, especially when lying down
- Slight superfluous movements with the arms during the bench press exercise

Further, the patient reported that sometimes her legs did not “listen to her” when she wanted to start walking and that she felt a “bit groggy”. The patient was not overly concerned and although the trainer encouraged the patient to speak to their oncologist on multiple occasions, they decided not to. Finally, with approval from the patient, the exercise trainer brought their suspicion of BM to the attention of the oncologist. The oncologist responded immediately and ordered a MRI, which confirmed BM. Figure 1 depicts the timeline of events. Key to the early detection of BM was the recognition of subtle symptoms detected by the exercise trainer and the trust and rapid action by the clinician.

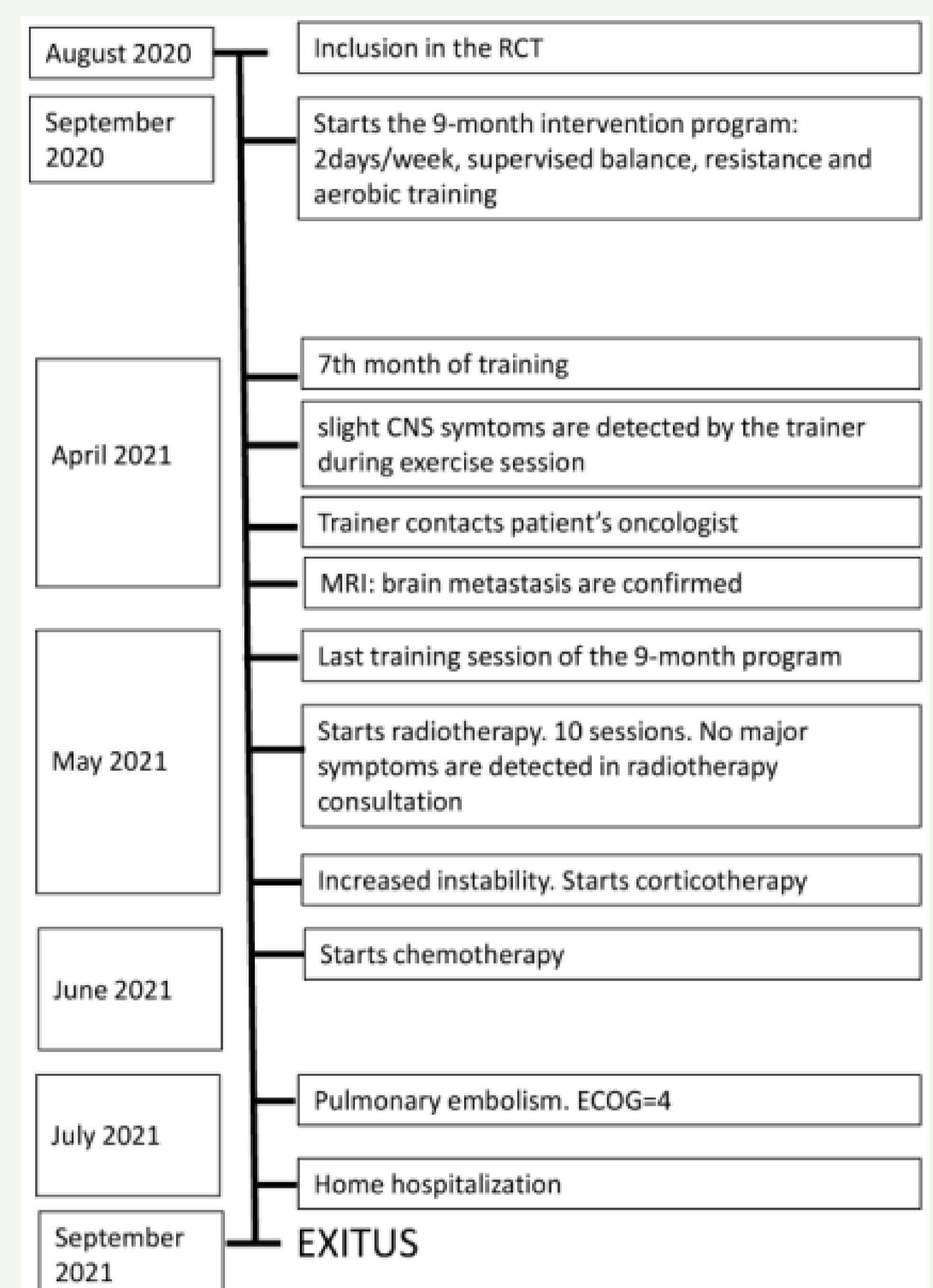


Figure 1 Timeline of events

Conclusion

This case reports supports the advantages of implementing physical exercise programs that are supervised by qualified professionals as part of routine cancer care for patients in need. It also highlights the need for 1) well-trained exercise specialists who are able to recognize subtle but significant signs of disease progression and 2) well-established communication pathways between exercise trainers and the medical team to enable the necessary actions to be taken. Reducing the time between detection of BM and treatment is a key factor that determines prognosis and the patient's overall survival and QoL.

References

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