JULY CASE DISCUSSION

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The subject of this case is a fit 42 year old Mountain Rescue team leader and experienced high altitude mountaineer.

In 1992 he reached 8000m on Mount Everest with no problems and has no history of altitude-related problems. Of note, he is under investigation for hypertension (BP180/100), but has not been commenced on treatment.
In October 1998 following 2 rest days at base camp (BC, 4545m) on Ama Dablam he set off unloaded for ABC (5000m) with the intention of picking up personal kit and continuing on to Camp 1.

Soon after leaving BC he noted that his peripheral vision was closing in and experienced a feeling of "other worldliness". Physically he felt strong but felt the need to tell another member of the team to keep an eye on him.
His peripheral vision became worse and he noticed that the colours of clothing etc were becoming increasingly intense. On arrival at ABC he was unable to remember the names of his teammates and became increasingly confused. He did not exhibit slurred speech or weakness and his gait was not ataxic. He was then helped back down to BC where he quickly recovered, leaving him feeling tired but otherwise well. He went on to reach Camp 1 the following day and summitted 4 days later with no further problems.

(Case Supplied by Louise Woolrich FRCS)

Charles Clarke, UK
I am not quite sure of the timescale of this illness, but I am assuming it was all over in hours/a day. Generally, I would not worry too much about it, and remember, if one says it is 'likely to be.....vascular', there are potentially important issues - driving, job etc. The positive visual phenomena sound migrainous. The subsequent symptoms described would also do for basilar migraine. In 1997 near Sepu Kangri, I climbed a 5600m pass from 4600m one morning. On the way down, I had on odd shimmery whole field visual disturbance, and couldn't see edges, which lasted several hours. I felt a bit odd. I thought it was a migraine - I do get a very occasional one - and on return to base camp in the late afternoon, I certainly was a bit odd, jumbled, getting words wrong, and not my usual sparky self over the dinner table. This all lasted several more hours. It was all followed by a trivial headache in the evening.

I feel sure this was a basilar migraine. I have had no problems this year. I think migraine/migraine-like events are underdiagnosed at altitude. There is a tendency to focus on the serious, the vascular or possible brain oedema, quite naturally.

Buddha Basnyat, Nepal
What you describe here in this 42 year old gentleman who had this experience of confusion in the vicinity of 5000 m is not an uncommon event and as you note here is outside the setting of AMS as we know

it. I believe what he had is " Transient Global Amnesia " a well known adult neurological disease entity characterisied by short lived confusion with intact motor functions. This is sometimes brought on by a highly emotional experience (perhaps the scenery was magnificent and moving). It could be a form of a transient ischaemia attack (TIA). TIAs are well described at these altitudes in trekkers and climbers. This is by all accounts a benign illness and does not presage a stroke.

Ken Zafren, USA
This case concerns a 42 year old experienced high altitude mountaineer with neurologic symptoms occurring just above Ama Dablam base camp. The history implies that this man was well-acclimatized. It would be useful to know if he had a history of migraine headaches. This does not sound like HACE since he had no headache and was not ataxic. I think that the top two diagnostic possibilities are migraine equivalent and TIA. It is probably impossible to sort these out in this case. I would favor TIA as the diagnosis. Reports of TIA at altitude seem to be increasingly common. The risk of recurrence with repeated exposure to altitude has never been studied, as far as I know.

Gerald Dubowitz, USA
The combination of hypertension and subsequent déjà vu with visual changes at altitude bring up the possibilities of epilepsy, temporal lobe hypoxia or transient ischaemia with or without embolic phenomena.
Judging by his excellent recovery, my money would be put on a migrainous type event here. It is very hard to establish whether this is the same as the transient ischaemia (described on expeditions ranging from Makalu in the 1960's through to Everest in 1994). I believe they are all variations on a similar theme. This could be a transient neurological event that may mimic migraine (tunnel vision, photopsia and déjà vu) or one which mimics transient ischaemic events (e.g transient dysarthria, hemiplegia and confusion).

It would be fair to say that we still have no real idea of the pathophysiology of these quite relatively common events. A major feature is that the individuals get better and nothing can be found back at sea level. Interestingly some go on to do well on their next sojourn at altitude and some get re-entrant events when they return to similar altitudes.

David Syme, UK
As a GP I just wonder about something simple like migraine. There does seem to be an association between migraine and Hypertension. Certainly patients of mine have had fewer symptoms when their hypertension was treated.

I personally would have serious doubts about leaving a BP of 180/100 untreated in a man of 42and would have wanted to complete the investigations before leaving. Perhaps this illustrates again the risks that mountaineers take with their health to undertake activities that are optional rather than essential.

David Hillebrandt, UK
A good G.P. type morning consultation involving differential diagnosis. Pity our surgery is not at 5000m ! Well of course one must consider low pO_2 and HACE but

what about migraine?

Brownie Schoene, USA
Migraine vs TIA as a result of his pernicious and probably real hypertension. The hypertension needs to be worked up and treated. His blood pressure should have been checked during the incident. Catecholamines are high upon first arrival at altitude and then down again such that he may have had even more accentuated hypertension upon arrival. Symptoms are certainly compatible with migraine as well which may well be provoked by altitude.

Gustavo Zubieta Sr, Bolivia
This symptomatology is tricky. There is insufficient clinical information, except that he has arterial hypertension. That suggests that his blood pressure is probably going up and down, influenced by many factors. We can only speculate in this case, since the symptoms disappear on arrival to the low lands, we believe that he had a vascular spasm localized in the peripheral or central area which controls the vision (painless). The symptoms have some similarities with migraine, a painful affection that is recurrent, where the etiopathogenesis, until now is unclear. Besides, he should have controlled his hypertension, at any altitude.

Jim Milledge, UK
The 42 year old Mountain Rescue team leader would seem to have suffered an unusual form of transient ischaemic attack. He demonstrated a good recovery from it by summiting Ama Dablam shortly after the episode.

Jim Litch, Nepal
As in many case reports, we are missing important details and information. Given the information presented I have the following comments.

The very sudden onset of the neurologic symptoms during ascent without prodromal mild symptoms argues very strongly against high altitude cerebral edema. (2) His initial symptoms of narrowing of peripheral vision and a feeling of "other worldliness" are very suspicious for hyperventilation. The individual was exerting fully at the time. We are not given specific information on the duration of these specific symptoms. Was there a component of anxiety present? Is there a history of anxiety disorder? (3) The worsening confusion, and inability to recognize teammates, without other focal neurologic signs present, makes me suspicious of Transient Global Amnesia. Transient global amnesia may be precipitated by cerebral vasoconstriction. Could hyperventilation have promoted this episode? (4) Both hyperventilation syndrome and transient global amnesia at high altitude are related to a recent gain in altitude in unacclimatized individuals, and not necessarily associated with altitude illness.

Litch JA, Bishop RA. Transient global amnesia at high altitude. NEJM 1999;340(18):1444

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