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Dr. Sanjay Gupta: Bin Laden
would need help if on
dialysis

(CNN)

--Speculation about the whereabouts and health of Osama bin Laden picked up over the weekend when Pakistan's president, Gen. Pervez Musharraf, said he thought bin Laden had likely died of kidney failure.

CNN medical correspondent Dr. Sanjay Gupta spoke Monday with CNN's Paula Zahn about bin Laden's appearance in recently released videotapes and the possibility that the accused terrorist leader was undergoing kidney treatment.

ZAHN: For a point of reference, I'd like for you to analyze pictures of Osama bin Laden that apparently were taken prior to September 11. Describe to us the color and the tone of his skin, and then I want you to contrast that with pictures we know to have been taken much later.

GUPTA: You can look [at pictures from a December 2001 video] and notice that he has what some doctors refer to as sort of a frosting over of his features -- his sort of grayness of beard, his paleness of skin, very gaunt sort of features. A lot of times people associate this with chronic illness. Doctors can certainly look at that and determine some clinical features.

But even more than that, it's sometimes possible to differentiate the specific type of disease or illness that he may be suffering from. The sort of frosting of the appearance is something that people a lot of times associate with chronic kidney failure, renal failure, certainly someone who is requiring dialysis would have that.

He's also not moving his arms. I looked at this tape all the way through its entire length. He never moved his left arm at all. The reason that might be important is because people who have had a stroke -- and certainly people are at increased risk of stroke if they also have kidney failure -- he may have had a stroke and therefore is not moving his left side. And in the rest of the videotape, he does move his right side a little bit more than he does his left. So those are some of the things that are sort of "of note" here in this more recent videotape.

ZAHN: I think we need to remind the viewers once again that the president of Pakistan talked about [bin Laden] importing two dialysis machines into Afghanistan. Of course, no one other than the president of Pakistan right now is confirming that [bin Laden] in fact needed dialysis.

GUPTA: That's right. And again, renal dialysis -- talking about hemodialysis -- is something that really is reserved for patients in end-stage renal failure. That means their kidneys have just

completely shut down.

The most common cause of something like that would be something like diabetes and hypertension. Once that's happened, if you're separated from your dialysis machine -- and incidentally, dialysis machines require electricity, they're going to require clean water, they're going to require a sterile setting -- infection is a huge risk with that. If you don't have all those things and a functioning dialysis machine, it's unlikely that you'd survive beyond several days or a week at the most.

ZAHN: If he had all these things you're talking about to keep the dialysis machine running, how much help does he need around him to administer the treatment?

GUPTA: You certainly need someone who really knows how to run that dialysis machine. You have to have someone who's actually assessing his blood, Osama bin Laden's blood, to see what particular dialysate he would need, and to be able to change his dialysate as needed. So you'd need a kidney specialist, a technician -- quite a few people around him.